

U.S. ARMY CORPS OF ENGINEERS
CIVIL WORKS PROGRAM

CONGRESSIONAL SUBMISSION
FISCAL YEAR 2005

REMAINING ITEMS

*Budgetary information will not be released
Outside the Department of the Army until
2 February 2004*

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 2005

REMAINING ITEMS

Table of Contents

Page No.

APPROPRIATION TITLE:

A. <u>General Investigations</u>	
Summary	1
1. Surveys	
c. Special Studies	3
e. Coordination with Other Federal Agencies, States and Non-Federal Interests	
(1) Planning Assistance to States	4
(2) Other Coordination Programs	
(a) Special Investigations	5
(b) Gulf of Mexico	5
(c) Chesapeake Bay Program	6
(d) Pacific Northwest Forest Case Study	6
(e) Interagency Water Resources Development	7

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:

Page No.

A. General Investigations (Continued)

(f) Interagency and International Support	7
(g) National Dam Inventory	8
(h) National Estuary Program	8
(i) North American Waterfowl Management Plan	9
(j) Cooperation with Other Water Resources	9
(k) CALFED Bay-Delta Program	10
(l) Lake Tahoe, NV	10

2. Collection and Study of Basic Data

a. Flood Plain Management Services	11
c. Other Programs	
(1) Stream Gaging (U.S. Geological Survey)	12
(2) Precipitation Studies (National Weather Service)	13
(3) International Waters Studies	15
(4) Hydrologic Studies	17
(5) Scientific and Technical Information Centers	21
(6) Coastal Field Data Collection	24
(7) Transportation Systems	28
(8) Environmental Data Systems	30
(9) Remote Sensing Systems Support	31
(10) Automated Information Systems Support	35
(11) Flood Damage Data Program	37

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:	<u>Page No.</u>
A. <u>General Investigations (Continued)</u>	
3. Research and Development	39
a. Navigation Systems	44
b. Flood and Coastal Protection	46
c. Environmental Technologies	49
d. System-Wide Water Resources	51
B. <u>Construction, General</u>	55
2. Navigation Projects	
a. Channels and Harbors	
(II) Projects Not Specifically Authorized by Congress	57
(Sec. 107, P.L. 86-645, as amended)	
(III) Mitigation of Shore Damages Attributable to Navigation . . .	57
Projects (Sec. 111, P.L. 90-483, as amended)	
(IV) Dredged Material Disposal Facilities Program	58
Sec. 101, P.L. 99-662, as amended)	
c. Inland Waterways Users Board (Sec. 302, P.L. 99-662)	59

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:	<u>Page No.</u>
B. <u>Construction, General (Continued)</u>	
4. Shore Protection Projects	
a. Shoreline Erosion Control Development Program (Sec 227, P.L. 104-303)	60
b. Projects Not Specifically Authorized by Congress (Sec. 103, P.L. 87-874, as amended)	60
5. Flood Control Projects	
a. Local Protection	
(II) Projects Not Specifically Authorized by Congress (Sec. 205, P.L. 80-858, as amended)	61
(III) Emergency Streambank and Shoreline Protection (Sec. 14, P.L. 79-526, as amended)	61
(IV) Snagging and Clearing (Sec. 208, P.L. 83-780, as amended)	62
6. Dam Safety and Seepage/Stabilty Correction Program	63
10. Improvement of the Environment	
a. Project Modifications for Improvement of the Environment (Sec. 1135, P.L. 99-662)	64

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:	<u>Page No.</u>
B. <u>Construction, General</u> (Continued)	
b. Aquatic Ecosystem Restoration (Sec. 206, P.L. 104-303)	64
12. Aquatic Plant Control (APC) Program	65
13. Beneficial Uses of Dredged Material (Sec. 204, P.L. 102-580) . .	66
14. Employees Compensation (Payments to the Department of Labor) . .	67
C. <u>Operation and Maintenance, General</u>	68
Aquatic Nuisance Control Research	69
Program Development Technical Support (ABS-P2)	71
Coastal Inlet Research Program	72
Cultural Resources (NAGPRA/Curation)	75
Dredge Wheeler Ready Reserve	77
Dredging Data And Lock Performance System	78
Dredging Operations and Environmental Research (DOER)	80
Dredging Operations Technical Support (DOTS) Program	82
Earthquake Hazards Reduction Program	84
Reserve For Key Emergency Maintenance/Repairs	86
Facility Protection	87
Great Lakes Sediment Transport Models	88
Protection of Navigation (Four Items)	
Protection, Clearing and Straightening of Channels	89
Removal of Sunken Vessels	89
Waterborne Commerce Statistics	89
Harbor Maintenance Fee Data Collection	90

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:	<u>Page No.</u>
C. <u>Operation and Maintenance, General</u> (Continued)	
Inland Waterway Navigation Charts	91
Monitoring of Completed Navigation Projects	92
National Dam Safety Program	94
National Dam Security Program	95
National Emergency Preparedness Program (NEPP)	96
National Lewis and Clark Commemoration Coordinator	98
Performance Based Budgeting Support Program	100
Recreation Management Support Program (RMSP)	102
Regional Sediment Mngt Demonstration Program	104
Reliability Models Program for Major Rehab	105
Water Operations Technical Support (WOTS)	106
Long-Term Options for Small Ports and Harbors	107
D. <u>Regulatory Program</u>	108
E. <u>Flood Control and Coastal Emergencies</u> (FCCE)	111
F. <u>Formerly Utilized Sites Remedial Action Program</u> (FUSRAP)	113
1. Sites	
a. Connecticut	
(1) Combustion Engineering, Windsor, CT	114
b. Iowa	
(1) Iowa Army Ammunition Plant, Middletown, IA	115

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:

Page No.

F. Formerly Utilized Sites Remedial Action Program (FUSRAP, Continued)

c. Maryland

(1) W.R. Grace, Baltimore, MD 116

d. Massachusetts

(1) Shpack Landfill, Norton/Attleboro, MA 117

e. Missouri

(1) St. Louis Downtown Site, St. Louis, MO 118

(2) Latty Avenue Properties, Hazelwood Interim Storage Site,
 St. Louis, MO 119

(3) St. Louis Airport Site, Vicinity Properties, St. Louis 120

(4) St. Louis Airport Site, St. Louis, MO 121

f. New Jersey

(1) Dupont Chambers Works, Deepwater, NJ 122

(2) Maywood, NJ 123

(3) Middlesex, NJ 124

(4) Wayne, NJ 125

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

APPROPRIATION TITLE:	<u>Page No.</u>
F. <u>Formerly Utilized Sites Remedial Action Program</u> (FUSRAP, Continued)	
g. New York	
(1) Ashland 1, Tonawanda, NY	126
(2) Colonie, NY	127
(3) Linde Air Products, Tonawanda, NY	128
(4) Niagara Falls Storage Site, NY	129
(5) Seaway Industrial Park, Tonawanda, NY.	130
h. Ohio	
(1) Former Harshaw Chemical Company, Cleveland OH	131
(2) Luckey, OH	132
(3) Painesville, OH	133
i. Pennsylvania	
(1) Shallow Land Disposal Area, Parks Township, PA	134
j. National	
(1) Potential Sites	135
G. <u>General Expenses</u>	136
H. <u>Revolving Fund</u> - Plant Replacement and Improvement Program (PRIP) . . .	141

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 2005

OTHER SUPPORTING INFORMATION:

I. <u>Interagency and International Support</u>	156
<u>Information Technology Costs</u>	157
SUMMARY OF BUDGET REQUEST FOR INLAND WATERWAYS TRUST FUND PROJECTS	161
SUMMARY OF ALL APPROPRIATIONS	163

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 2005

SUMMARY OF REMAINING ITEMS

GENERAL INVESTIGATIONS

	FY 2004 Conference	FY 2005 Request	Increase (Decrease)
	-----	-----	-----
	\$	\$	\$
1. Surveys	12,850,000	8,924,000	(3,926,000)
c. Special Studies	1,500,000	375,000	(1,125,000)
e. Coordination with Other Federal Agencies, States, and Non-Federal Interests	11,350,000	8,549,000	(2,801,000)
(1) Planning Assistance to States	6,500,000	4,650,000	(1,850,000)
(2) Other Coordination Programs			
(a) Special Investigations	2,105,000	1,799,000	(306,000)
(b) Gulf of Mexico Program	96,000	131,000	35,000
(c) Chesapeake Bay Program	96,000	75,000	(21,000)
(d) Pacific Northwest Forest Case Study	96,000	75,000	(21,000)
(e) Interagency Water Resources Development	1,052,000	900,000	(152,000)
(f) Interagency and International Support	144,000	113,000	(31,000)
(g) Inventory of Dams	287,000	222,000	(65,000)
(h) National Estuary Program	95,000	75,000	(20,000)
(i) North American Waterfowl Management Plan	96,000	75,000	(21,000)
(j) Estuary Habitat Restoration Program	0	0	0
(k) Coordination with Other Water Resources Ager	287,000	246,000	(41,000)
(l) CALFED	96,000	94,000	(2,000)
(m) Lake Tahoe, NV	400,000	94,000	(306,000)

2 February 2004

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 2005

SUMMARY OF REMAINING ITEMS

GENERAL INVESTIGATIONS

	FY 2004 Conference	FY 2005 Request	Increase (Decrease)
	----- \$	----- \$	----- \$
2. Collection and Study of Basic Data	14,250,000	10,274,000	(3,976,000)
a. Flood Plain Management Services	7,500,000	5,625,000	(1,875,000)
c. Other Programs			
(1) Stream Gaging (U.S. Geological Survey)	500,000	600,000	100,000
(2) Precipitation Studies (National Weather Service)	300,000	225,000	(75,000)
(3) International Waters Studies	400,000	300,000	(100,000)
(4) Hydrologic Studies	400,000	300,000	(100,000)
(5) Scientific and Technical Information Centers	100,000	78,000	(22,000)
(6) Coastal Field Data Collection	3,500,000	1,875,000	(1,625,000)
(7) Transportation Systems	500,000	375,000	(125,000)
(8) Environmental Data Studies	100,000	94,000	(6,000)
(9) Remote Sensing	200,000	152,000	(48,000)
(10) Automated Information Systems Support	450,000	402,000	(48,000)
(11) Flood Damage Data Program	300,000	248,000	(52,000)
3. Research and Development	23,000,000	20,800,000	(2,200,000)
	=====	=====	
Totals	50,100,000	39,998,000	(10,102,000)

2 February 2004

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

c. Special Studies

Study	Total Estimated Federal Cost	Allocation Prior to FY 2004	Allocation FY 2004	Tentative Allocation FY 2005	Additional to Complete After FY 2005
National Shoreline	7,000,000	624,000	325,000	375,000	5,676,000

SCOPE:

The study is an interagency effort to determine the extent and cause of shoreline erosion on all the coasts of the United States and to assess the economic and environmental impacts of that erosion. The study will analyze the appropriate Federal and non-Federal roles and the advisability of using a systems approach to sediment management for linking the management of all (shore protection, navigation channel dredging, and environmental restoration and preservation) projects in the coastal zone so as to conserve and efficiently manage the flow of sediment within littoral systems.

ACCOMPLISHMENTS:

FY 2002 funding initiated work on this study. The Fiscal Year 2004 efforts include:

- 1) Continue monitoring and reviewing progress in the various Regional Sediment Management (RSM) Demonstration projects around the nation and conducting a policy seminar on RMS issues.
- 2) Continue identifying data availability and data needs in order to complete the update and coordinate data collection and analysis efforts with the U.S. Geological Survey and the National Ocean Service
- 3) Conduct technical forums to identify technical guidelines for collecting and analyzing data on the extent and causes of shoreline erosion and accretion
- 4) Develop draft geomorphic, environmental, and economic assessment protocols to conduct the National Assessment
- 5) Initiate environmental analyses
- 6) Initiate identification of agency roles and contributions to shoreline management.

JUSTIFICATION:

FY 2005 funding would continue work on this study. The Fiscal Year 2005 efforts include:

1. \$25,000 to continue monitoring and reviewing progress in the various Regional Sediment Management Demonstration projects around the nation.
2. \$125,000 to finalize the geomorphic, environmental, and economic assessment protocols to conduct the National Assessment
3. \$50,000 to continue identification of agency roles and contributions to shoreline management
4. \$50,000 to continue economic research
5. \$75,000 to continue environmental analyses
6. \$50,000 for planning the regional assessment studies.
7. Section 215 of the Water Resources Development Act of 1999 provides the authority for conducting this study. Completion presently scheduled for 30 Sep 2008.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(1) Planning Assistance to States

SCOPE:
This Corps of Engineers program stems from Section 22 of the Water Resources Development Act of 1974, as amended, which authorizes the Secretary of the Army to assist States, local governments, Indian tribes, and other non-Federal entities in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. The studies are cost-shared on a 50% Federal, 50% non-Federal basis. The program can encompass many types of studies dealing with water resources issues, including environmental conservation/restoration, wetlands evaluation, water supply and demand, water quality, flood damage reduction, coastal zone management, and dam safety.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$40,000,000
Allocation Requested for FY 2005	4,650,000
Balance to Complete Five-Year Program after FY 2005	35,350,000
Allocation for FY 2004	4,225,000
Change in FY 2005 from FY 2004	425,000
Average Annual Allocation for FY 2000-2004	6,553,050

JUSTIFICATION:
The Planning Assistance to States program has continued to evolve into a highly effective tool for providing technical and planning assistance to states, local governments, and Indian tribes. These customers recognize the need to develop locally directed solutions to their water resources problems. Interest from states, regional and local governments, Indian tribes, and other non-Federal public agencies in this highly efficient and effective Program continues to grow. The FY 2004 amount will enable the Corps to provide much needed planning and technical assistance to aid them in a wide variety of water resource efforts, including environmental restoration studies, watershed planning, and flood plain management planning. Currently, there are ongoing studies that require additional funds to complete, and a number of unfunded studies that have been identified by states, communities, and Indian Tribes as high priority studies. The FY 2004 request will allow the Corps to continue and complete ongoing studies, and initiate additional high priority studies.

ACCOMPLISHMENTS:
In fiscal year 2003, the Corps of Engineers had 245 studies underway in 42 states, the District of Columbia, Puerto Rico, Guam, the Northern Mariana Islands, and for Federally-recognized Indian tribes. These studies provided technical and planning assistance for a full range of water resources issues. Significant efforts involved studies to assist local communities in restoring urban river environments, and accomplishing wetlands identification and mapping studies. In addition, efforts were undertaken to assist states and local governments in ecosystem restoration, drinking water supply and demand, water quality, and flood damage reduction.

1. Surveys

APPROPRIATION TITLE: General Investigations, FY 2005

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests (Continued)

(2) Other Coordination Programs

Allocation For FY 2004 3,153,000

Tentative Allocation FY 2005 \$3,899,000

(a) The Special Investigations request is \$1,799,000. The amount of \$150,000 provides for the review of preliminary permit and licenses applications for non-Federal hydroelectric power development either at or affecting Corps water resource projects. The amount of \$1,649,000 provides for (1) special investigations and reports of nominal scope prepared pursuant to Congressional and other requests from outside the Corps of Engineers for information relative to projects or activities which have no funds; (2) similar work of detailed scope, as specifically authorized by the Chief of Engineers; and (3) review of reports and environmental impact statements of other agencies. Among the investigations paid for from these funds are investigations of nominal scope of flooding potential and flood damages, drainage, harbor improvements, anchorages, and development of navigation channels.

(b) The Gulf of Mexico Program (GMP) request is \$131,000. The purpose of the GMP is to formulate and implement creative solutions to economic and environmental issues with Gulf-wide and national implications. Hypoxia/nutrient enrichment, Habitat, Public Health (Shellfish) and Non-indigenous Species are the focus issue areas, which are linked to authorized Corps missions in the five-state GMP area. The Hypoxia and Habitat focus areas are now getting more emphasis...through the Clean Water Action Plan and links to a multitude of Corps programs. U.S. Environmental Protection Agency-initiated, the GMP is partnership-driven, blending the programs and resources of Federal, state and local governments, with the resources and commitments of business, industry, citizens groups and academia. The Corps has a full time staff member serving as liaison to the GMP Office (GMPO). That individual's primary duty is to provide the linkage between the Southwestern, Mississippi Valley and South Atlantic Major Subordinate Commands and their districts and the current and evolving activities of the GMP/GMPO. Personnel from several districts and divisions serve on various committees and focus area groups. Secondary duties of the Corps liaison include: 1) coordinating with and supporting the Corps representative on the GMP's Management Committee as well as the DOD representative serving on the GMP's Policy Review Board; 2) functioning as the Corps' alternate Management Committee representative; 3) functioning as a GMPO Interagency Management Team Member; 4) mentoring the GMPO Habitat Focus Team; and, 5) serving as a member of the GMPO Hypoxia Focus Team. The Corps liaison also serves as the Corps' functional and program link to the Coastal America-Gulf of Mexico Regional Implementation Team (RIT). The requested funds will allow partial participation of the Corps in implementation of GMP-formulated initiatives.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(c) Chesapeake Bay Program. The amount of \$75,000 is requested to continue activities initiated under Special Investigations. The Chesapeake Bay Program (CBP) is an interagency program, initiated by the US Environmental Protection Agency (EPA), for the protection and restoration of the bay's natural resources. These natural resources have tremendous environmental and economic significance to the northeast region and to the Nation. Following extensive Corps of Engineers investigations and EPA studies in the 1970's and early 1980's, it became increasingly clear that the Chesapeake Bay as a system was under intense pressure from development and overuse and was undergoing degradation in water quality, living resources and other ecological indicators. With the funds requested, the Baltimore District will continue participation in the CBP Implementation Committee and the Federal Agencies Subcommittee addressing various subjects such as wetlands, submerged aquatic vegetation, and land stewardship. The Baltimore District will accomplish limited work associated with the lead on two initiatives (Anacostia Biennial Workplan and Chesapeake Bay Habitat Restoration) from the Agreement of Federal Agencies on Ecosystem Management in the Chesapeake Bay signed in July 1994 and its successor, the Federal Agencies Chesapeake Ecosystem Unified Plan (FACEUP) signed by the ASA(CW) in 1998, as well as participating in workgroups on other aspects of the agreements. ASA(CW) was a signatory on a Special Tributary Strategy for Federal Lands in the District of Columbia agreement that commits the Corps to develop stormwater pollution prevention and nutrients management plans. Many of these actions affect Corps authorized missions in the Chesapeake Bay. It is very important for the Corps representatives to be active members of the CBP Implementation Committee, the Federal Agencies Subcommittee, the Federal Agencies Subcommittee and other working groups.

(d) The Pacific Northwest Forest Case Study request is \$75,000. The Northwest Forest Plan (NFP) is an interagency program, initiated by the White House's Council of Environmental Quality, for ecosystem management of watersheds within the public lands in the Pacific Northwest within the range of the Northern Spotted Owl (24,000,000 acres). The NFP institutes an interagency approach for restoring and protecting animal and plant species on public lands and restoration of environmental habitats. In FY 1999, the Corps of Engineers became an official signatory agency to the NFP Memorandum of Understanding. However, due to reduced funding over the past several years, the Corps did not resign the new MOU in 2003. With the funds requested, Portland District will participate in NFP activities as an adjunct representative to the various regional executive and management committees on a part-time basis. NFP participants are presently concentrating on further refining the scopes of agency participation and contributions with the goal of streamlining the implementation of timber and restoration activities within its watershed-scale ecosystem management strategies. Many of these strategies and programs involve, and will benefit from, the Corps authorized missions throughout the western states. The NFP presents the best outreach opportunity for the Corps to expand its involvement with the other agencies of the Federal and State communities to use all of our engineering and environmental capabilities to address many of government's missions.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(e) The Interagency Water Resources Development request is \$900,000. This amount provides \$750,000 for Corps of Engineers district activities, not otherwise funded, that require coordination effort with non-Federal interests. These activities include items such as meeting with City, County and State officials to help them solve water resources problems when they have sought advice or to determine whether Corps programs are available and may be used to address the problems. This will also cover costs of meeting with potential study sponsors before studies are budgeted to insure they understand study cost sharing and to obtain an indication of their interest in participating in a future study. It also provides \$150,000 for two American Heritage River Navigators who are supported by the US Army Corps of Engineers, based upon Executive Order 13061, dated 11 September 1997. These River Navigators provide direct support to the Community Partners for the New River, which flows through NC, VA and WV; and for the Upper Mississippi River above St. Louis, MO. The navigators assist the individual communities and community partners in accessing a variety of Federal programs to achieve the goals in the river workplans. These workplans are a product of river community partners' locally driven, watershed management approaches. Goals include economic revitalization, environmental restoration, and historic and cultural preservation. Immediate targets in the communities' river workplans include improvements such as land cleanup, alternative agriculture and aquaculture projects, community revitalization, educational outreach, stormwater runoff, downtown and riverfront improvements and preservation of historic features in river communities. The River Navigators provide a conduit and coordination link between the community partners and the various Federal programs that might apply to, and provide funding sources for the individual community projects.

(f) The Interagency and International Support request is \$113,000 to allow the Corps of Engineers to participate with other Federal agencies and international organizations to address problems of national significance to the United States. The Corps of Engineers has widely recognized expertise and experience in water resources, infrastructure planning and development, and environmental protection and restoration. Frequently, other Federal agencies, particularly the State Department and the Environmental Protection Agency, and international organizations request use of the Corps talents in addressing domestic or international problems of utmost importance to the United States. Often the requesting entity is not able to reimburse all Corps costs, including salaries, but yet the success of the program can be greatly enhanced by employing the talents of the Corps. In many cases the Corps abilities to perform its civil works mission or promote opportunities in the U.S. private sector are also enhanced. In FY 2004, the program funds are being used to support the State Department on Middle East and other global water issues, the World Water Council, the Federal Emergency Management Agency, the Environmental Protection Agency on water-related issues, and other initiatives of national importance. The requested funds will be used to cover Corps salary and travel costs not otherwise available. International activities will be undertaken only after consultation with the State Department.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(g) The Inventory of Dams request is \$222,000. These funds will be used for continued maintenance and publication of the National Dam Inventory. Section 215 of the Water Resources Development Act of 1996 (Public Law 104-303) authorized \$500,000 to be appropriated each fiscal year for the maintenance and publication of the National Dam Inventory. This authorization was continued in the Dam Safety and Security Act of 2002 (Public Law 107-310). This funding level will provide maintenance of the inventory but does not assure completeness of the inventory for public safety and security purposes. Integration of the National Inventory of Dams with the Dam Security and Analysis System to identify terrorist threats to dams will be accomplished in future fiscal years. The Inventory was initially compiled in 1975 has been periodically updated to reflect construction of new dams, ownership changes, major modifications to existing dams, decommissioning and removal of dams, and improvements in the accuracy and completeness of the data. The current update includes over 78,000 dams, and focuses on current technology, integrating computer software into the inventory package to improve the ease of use, accuracy, and accessibility of the data. These funds will be used to implement improved information flow and data quality control processes, to greatly enhance the state of knowledge management for dam safety. The inventory will continue to be improved utilizing rapidly evolving technology including enhanced World Wide Web access, a Geographic Information System (GIS) interface, and integration with other dam safety resources. The importance of continued maintenance and publication of the National Dam Inventory has increased. The inventory is now required for use by the Secretary of Homeland Defense and the National Dam Safety Review Board in the allocation of dam safety program assistance funds to the various States in proportion to the number of dams in the state. Inventory data is also included in the biennial report to Congress on the National Dam Safety Program. The Inventory also plays an important role in the identification of infrastructure in risk due to terrorist activities. Additional efforts are also required to ensure data security in response to Homeland Defense activities. The ongoing maintenance and publishing of the Inventory is a coordinated effort involving data from the Federal and non-federal Dam Safety community in cooperation with the Interagency Committee on Dam Safety (ICODS) and the Association of State Dam Safety Officials (ASDSO).

(h) The National Estuary Program request is \$75,000. These funds will be used to participate with Federal and State agencies in the National Estuary Program (NEP) administered by the Environmental Protection Agency under the Water Quality Act of 1987 (Section 320 of PL 100-4). The NEP is an interagency planning program to develop management plans for nationally significant estuaries designated by the EPA. To date, the following 28 estuaries have been designated under the program: Puget Sound, WA; Delaware Estuary, DE, NJ & PA; and Delaware Inland Bays, DE; New York/New Jersey Harbor, NY-NJ; Sarasota Bay, FL; Santa Monica Bay, CA; San Francisco Bay, CA; Galveston Bay, TX; Albermarle/Pamlico Sound, NC; Buzzards Bay, MA; Narragansett Bay, RI; and Long Island Sound, CT-NY, NY; Massachusetts Bay, MA; Barataria/Terrebonne Bays, LA; Indian River Lagoon, FL; Casco Bay, ME; Tampa Bay, FL; San Juan Bay, PR; Corpus Christi Bay, TX; Tillamook Bay, OR; Peconic Bay, NY, Barnegat Bay, NJ; Charlotte Harbor, FL; Lower Columbia River Estuary, OR & WA; Maryland Coastal Bays, MD; Mobile Bay, AL; Morro Bay, CA; and New Hampshire Estuaries, NH. Because of extensive Corps involvement with Federal water resources projects in the nation's estuaries and other responsibilities in waters of the U.S., the Corps has been asked to participate on the management and technical advisory committees of those NEP estuaries being studied. The requested funds would be used to cover costs of Corps field office meeting attendance, field reconnaissance, and data transfer. Because of similar objectives, these funds could be used for similar coordination activities conducted under the Coast America initiative.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(i) The North American Waterfowl Management (NAWMP) request is \$75,000. These funds will be used to continue cooperation with Federal and State agencies, and non-Federal interests in support of the NAWMP administered by the Department of the Interior, Fish and Wildlife Service. The NAWMP is an international program designed to reverse downward trends in North America's waterfowl populations by protecting and improving waterfowl habitats nationwide, particularly in 34 areas within the United States identified as being critical to meeting NAWMP goals and objectives. Department of the Army support to the NAWMP is set forth in an agreement signed with the Department of the Interior on January 23, 1989. The Corps of Engineers has broad water resources development responsibilities and authorities and has stewardship responsibilities for over seven million acres of water and land. Many Corps of Engineers projects contribute directly or indirectly to the habitat base for the nation's waterfowl, and other wetland species. Current and future Corps of Engineer projects are expected to play an even greater role, particularly during years of low rainfall. Also, the Corps of Engineers has recognized extensive environmental engineering and technical expertise and experience that can contribute greatly toward meeting the NAWMP waterfowl habitat improvement goals and objectives. The requested funds would be used to cover costs of Corps of Engineers field office participation in the field trips, interagency coordination meetings, and information transfer in response to conditions set forth in the agreement between the Department of the Interior and the Department of the Army. Because of similar objectives, these funds could also be used for similar coordination activities conducted under the Coastal America initiative.

(j) The Coordination With Other Water Resources Agencies request is \$246,000. Cooperation with the Department of Agriculture (USDA) is under the Watershed Protection and Flood Prevention Act of 1954 (Section 5 of PL 566-83), as amended; the Flood Control Act of December 22, 1944 (Section 1 of PL 534-78), as amended; and the National Environmental Policy Act of 1969 (PL 91-190). Executive Order No. 10913, dated 18 January 1961, requires that cognizance be taken of constructed and contemplated upstream and downstream USDA works, and that plans be submitted to the Secretary of the Army for review and comment prior to their transmission to the Congress through the President. As the agency responsible for the flood control features of basin program, the Corps of Engineers must provide the Department of Agriculture with information on proposed Corps projects, including their effect on contemplated watershed programs. The Corps is also required by Section 102 (2)(c) of the National Environmental Policy Act of 1969 to review the environmental impacts that would result from installation of USDA project features. Cooperation with the Bureau of Reclamation of the Department of the Interior includes preparation of estimates of flood control requirements, and benefits, and reservoir operating criteria for storage reservoirs to be constructed with Federal funds, in accordance with Sections 1 and 7 of PL 534-78 and Section 7 of PL 984-84, as amended. Studies made by the Bureau of Reclamation of the flood control features of proposed reclamation projects are submitted to the Corps of Engineers for review and determination of the flood control benefits. The Corps of Engineers uses the data collected by the Bureau but makes an independent evaluation of the project. The Secretary of the Interior uses the report of the Chief of Engineers in making allocation of project costs to flood control. Corps representation is required for cooperation with Federal and state agencies such as River Basin Compact Commissions; Interstate River Basin Compacts; and Regional Planning Commissions in authorized, but unfunded investigations.

APPROPRIATION TITLE: General Investigations, FY 2005

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(k) The CALFED request is \$94,000, which will be used to continue the coordination efforts in the CALFED Bay Delta process. The CALFED Bay-Delta Program is a three-phased solution process for the development of a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. Phase I, the identification of the range of alternatives, was completed in fall 1996. Phase II was completed 28 Aug 00 with the signing of the Record of Decision (ROD) defining the programmatic plan. Phase III initiated Sep 00 is the first 7 years of a 30-year process. As outlined in the ROD, the Corps with the State of California are co-managers of the CALFED Phase III program element, Levee System Integrity, and will provide specific technical and implementation support.

(l) The Lake Tahoe request is \$94,000. This funding is required to continue work associated with the Lake Tahoe Federal Interagency Partnership as directed in Executive Order 13057. The Federal Interagency Partnership is working with state and local agencies and public interest groups to arrest further deterioration of Lake Tahoe while maintain a viable economic climate. Efforts will include active participation in partnership activities, completion of regional hydrology study of Lake Tahoe Basin, program project planning for water quality projects in the Lake Tahoe Basin and program management in conjunction with Federal, state and local agencies.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

a. Flood Plain Management Services

SCOPE: This Corps of Engineers program stems from Section 206 of the 1960 Flood Control Act (PL 86-645), as amended, which authorizes the Secretary of the Army to compile and disseminate data on floods and flood damage potential and to provide guidance in their use in flood-related planning to State and local agencies. This information and guidance supports planning and implementing actions which reduce the flood hazard through wise use of flood plains. The Flood Plain Management Services Program provides flood hazard information, interpretation, and guidance for sites or short reaches of stream or coast and technical and planning assistance to states, communities and Indian Tribes; develops and disseminates guides and pamphlets to convey the nature of flood hazards and to foster public understanding of the options for dealing with flood hazards; and participates with the Federal Emergency Management Agency and local governments in the conduct of pre-disaster hurricane evacuation and preparedness studies for mobilizing local community responsiveness to natural disasters in high-hazard coastal areas.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$50,000,000
Allocation Requested for FY 2005	5,625,000
Balance to Complete Five-Year Program after FY 2005	44,375,000
Allocation For FY 2004	4,875,000
Change in FY 2005 from FY 2004	750,000
Average Annual Allocation for FY 2000-2004	6,438,000

JUSTIFICATION: The funds requested for FY 2005 are to address the growing number of requests from states, regional and local governments, Indian Tribes, and other non-Federal public agencies. An increase in funds allocation will enable states and local communities to become more involved in the application of flood plain management measures. It will provide them site-specific flood and flood plain data and assistance; assist with efforts to identify flood hazards in smaller communities under growth pressures; facilitate special studies that concentrate on the prevention of future flood damages, giving increased emphasis to the application of non-structural measures; and enable critical pre-disaster hurricane evacuation and preparedness studies for states and counties along the Atlantic and Pacific Oceans, the Gulf of Mexico, and US islands in the Caribbean and Pacific.

ACCOMPLISHMENTS: Responses to requests from Federal and non-Federal agencies, communities, Indian Tribes and individuals for flood-related information, interpretation, and guidance continue to number into the tens of thousands and involve property valued at billions of dollars. The Corps participated in pre-disaster hurricane evacuation and preparedness studies for high-hazard areas in Louisiana, Massachusetts, Florida, Connecticut, North Carolina, South Carolina, New York, Puerto Rico, New Hampshire, Delaware, Maryland, Virginia, Georgia, Alabama, Mississippi, Hawaii, Guam, Samoa, and the Commonwealth of the Northern Mariana Islands; provided support for updating and improving mathematical models of flood plain hydrology and hydraulics; developed training programs in flood plain hydrology and hydraulics; and prepared flood-proofing studies.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other programs

(1) Stream Gaging (U.S. Geological Survey)

SCOPE: The Corps of Engineers cooperates with the U.S. Geological Survey in this effort, and contributes funds for all or part of the cost of the operation and maintenance of about 2,520 stations that are of special importance to the Corps mission. The Corps established this continuing, cooperative program in March 1928, so that streamflow data would be available to meet special needs concerning the Corps water resources responsibilities.

SUMMARIZED FINANCIAL DATA:

Estimated Five-year (FY 2005-2009) Program Cost	\$3,600,000
Allocation Requested for FY 2005	600,000
Balance to Complete Five-year Program after FY 2005	\$3,000,000
Allocation for FY 2004	325,000
Change in FY 2005 from FY 2004	275,000
Average Annual Allocation for FY 2000-2004	585,000

JUSTIFICATION: The Corps of Engineers makes extensive use of streamflow records in the planning, design, construction, and operation of water resources projects. The Basic network of stream gaging stations operated by the Geological Survey under its normal functions without support from the Corps is inadequate to meet all the special needs of the Corps water resource development responsibilities. Accordingly, a cooperative program was established under which funds are transferred to the Survey to cover, partially, the cost of operating specific stations. In the optimum development and management of water resources, it is essential that continuous records of streamflow be maintained at specific sites over a long period of years to provide a reliable measure of water resources available for various uses. This budget item covers only the non-project portion of the cooperative program. To continue the operation of stations of special interest to the Corps, an estimated total of \$17,100,000 will be required by the U.S. Geological Survey during FY 2005, exclusive of funds received from other cooperative sources. The operation and maintenance cost of these stations will be financed from three sources, as follows: (1) \$560,000 appropriated directly to the U.S. Geological Survey for special Corps stations; (2) \$600,000 from this budget item for stations not directly attributed to the Corps projects; and (3) \$16,500,000 from Corps funds budgeted elsewhere for authorized projects and studies. The basic program will remain at the same level as in previous years.

ACCOMPLISHMENTS: Records for the streamflow stations supported by transfer of funds are used primarily to operate Federal flood reduction projects. In the past ten years these projects have reduced flood damages by an average of \$22.8 billion annually. Not only are these gages used by the Corps, but 100 percent of the data are used by the National Weather Service as the basis for its public flood forecasts. In addition, the data are published on the Internet by the Corps and/or in a regular series of reports by the U.S. Geological Survey and provide valuable information for many Federal and state agencies and the public.

COORDINATION: This program is fully coordinated with the U.S. Geological Survey. Costs for conducting the work are compiled by representatives of the Survey to identify a basis for the transfer of funds to that agency.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(2) Precipitation Studies (National Weather Service)

SCOPE:

This is the Hydrometeorological Studies Program conducted for the Corps of Engineers by the National Weather Service (NWS). The NWS performs analyses of storm rainfall and other meteorological data required to develop hydrologic criteria for use by the Corps in planning, design and water control management of flood control and water resources development projects, and in floodplain management studies. The Corps transfers funds to the NWS to pay for the work.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY2005-2009) Program Cost	\$ 1,500,000
Allocation Requested for FY 2005	225,000
Balance to Complete Five-Year Program after FY 2005	1,275,000
Allocation for FY2004	195,000
Change in FY 2005 from FY2004	30,000
Average Annual Allocation for FY 2000-2004	295,000

JUSTIFICATION:

The scientific services provided by the National Weather Service under this program consist of: (1) review of the meteorological aspects of storm data compiled under the Hydrologic Studies Program conducted by the Corps; (2) development of probable maximum precipitation (PMP) estimates and occurrence probability of storms for large regions and for specific river basins; (3) precipitation depth-duration-frequency estimates for regions and the nation; (4) development of meteorological parameters pertaining to hurricanes, northeasters and other wind phenomena; and (5) other studies necessary to accomplish the Corps mission. Funds in the amount of \$195,000 will be required in FY 2005 to continue the program at a level consistent with Corps needs. The entire cost of the Corps hydrometeorological studies program is funded under this budget item.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(2) Precipitation Studies (National Weather Service) (Continued)

ACCOMPLISHMENTS FY 2004:

A study of precipitation frequency for the semi-arid southwestern U.S., which began in FY 1991, was completed and published as the first volume of NOAA Atlas 14. This is a major accomplishment and sets the standard for similar studies of the rest of the U.S. Work on the precipitation-frequency study of Ohio River basin and surrounding states, and for Puerto Rico and the Virgin Islands was completed and published. Work on the precipitation-frequency study for the Hawaiian Islands resumed after several years of postponement and delay. NWS continued support of the State of Colorado's independent PMP analysis for the Corps reservoir on Cherry Creek by reviewing and providing comments on the state's contractor's deliverables.

FISCAL YEAR 2005:

The major efforts in FY 2005 will be to continue work on revision of the Precipitation-Frequency Atlas for the United States (NOAA Atlas 14), with emphasis given to: (a) completing the study of the Hawaiian Islands; (b) initiating updates for the remaining states. NWS will maintain the capability to do site specific work for PMP analyses for Corps projects throughout the United States.

COORDINATION:

This program is fully coordinated with the National Weather Service, Office of Hydrologic Development. For the precipitation-frequency study of the Ohio River basin region, the Corps assisted the NWS obtain significant cost-sharing from the states in the region and will attempt to obtain cost sharing from the states and other federal agencies for the remaining states.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(3) International Waters Studies

SCOPE:

The Boundary Waters Treaty of 1909, the Niagara River Treaty of 1950, the Columbia River Treaty of 1961, and other less formal agreements between the Governments of the United States and Canada are concerned with the regulation, control, and use of boundary waters. Under the Boundary Waters Treaty of 1909, the International Joint Commission (IJC) was established and empowered to establish local boards, which conduct investigations and assure adherence to orders of approval pertaining to use of boundary waters issued by the Commission. Corps of Engineers representatives serve on and chair the U.S. Sections of the following IJC Boards: Saint Croix River, Champlain-Richelieu, Lake Champlain, St. Lawrence River, Niagara, Lake Superior, Lake of the Woods, Rainy Lake, Souris-Red Rivers Engineering, Souris River Control, Kootenay Lake, and Osoyoos Lake. Under separate treaties, Corps representatives serve on and chair the U.S. Sections of the Columbia River Treaty Permanent Engineering Board, the Columbia River Treaty Entities, the International Niagara Committee, and the International Lake Memphremagog Board. These Boards and Committees hold joint meetings, review report drafts and correspondence, make field inspections, obtain, collect, and analyze hydrologic and hydraulic data, and report their findings to the establishing parties. The degree of study activity varies depending upon the requirements of the Commission or Treaty under which they were established. These efforts assure better control, use, and orderly development of the jointly controlled water resources, and are of importance in attempting to meet water demands resulting from an expanding economy along the United States-Canadian border. Studies are closely related to the Corps of Engineers' Civil Works program and are summarized in the Assistant Secretary of the Army for Civil Works' Annual Report.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2004-2009) Program Cost	\$1,500,000
Allocation Requested for FY 2005	300,000
Balance to Complete Five-Year Program after FY 2005	1,200,000
Allocation for FY 2004	260,000
Change in FY 2005 from FY 2004	40,000
Average Annual Allocation for FY 2000-2004	366,600

JUSTIFICATION:

The amount requested for FY 2004 will fund Corps of Engineers participation in assisting the U.S. Government meet its obligations under provisions of boundary water treaties and other international agreements between the United States and Canada. CELRD provides support for implementation of the Niagara Treaty of 1950 that governs the split of Niagara River Waters between the U. S. and Canada, and between the uses of the waters.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(3) International Waters Studies (continued)

Northwestern Division engages in activities associated with implementation of the Columbia River Treaty and the Kootenay Lake and Osoyoos Lake Boards of Control. CENWD, together with Bonneville Power Administration and British Columbia Hydro annually develop the Assured Operating Plan and the Detailed Operating Plan for the treaty storage projects. Funds also are used to support the work of the Columbia River Treaty Permanent Engineering Board, including publication of its annual report to the Governments. North Atlantic Division is engaged in support of the Saint Croix River Board of Control and the Gulf of Maine Council on the Marine Environment. Work in the Saint Croix R. Basin involves retrieval and analysis of water data to assure compliance with IJC rules and annual inspection of dams and fish passage facilities.

ACCOMPLISHMENTS:

The Corps Division and District commanders and their staffs met all of their many and diverse responsibilities in representing the United States on the previously listed IJC Boards of Control and Treaty entities, boards and committees. The IJC-sponsored special flood damage reduction study of the Red River Basin was closed without completing the full scope of the planned work because of lack of funds from the United States. CENWD completed the Libby Coordination Agreement, and implemented all Columbia River Treaty required Assured Operating Plans (AOP) and Determinations of Downstream Power Benefits (DDPB).

FISCAL YEAR 2005:

The Corps will continue to carry out its multiple responsibilities to the various IJC Boards of Control and to the several Treaty entities, boards and committees. During FY 2005, additional flow data will be obtained and used to update the rating curve used to verify compliance with Niagara Treaty requirements. In addition, pursuant to the October 1999 Plan of Study for Lake Ontario regulation improvements, the IJC established the Lake Ontario-St. Lawrence River Study Board. Investigations are continuing as the fourth year of a 5-year effort. A Plan of Study for evaluating the Lake Superior regulation criteria outflows is being developed for approval by Governments. A basin-wide hydrologic and regulation model will be implemented. Special studies related to international impacts of evaluation of endangered species compliance related to Columbia River Treaty projects will be continued by CENWD. CENAD will continue normal work in support of the Saint Croix Board of Control and the Gulf of Maine Council on the Marine Environment. Discussions are ongoing with the IJC on expansion of the IJC's mission to include environmental objectives, as described in the report entitled "The IJC and the 21st Century". The Corps will be supporting the IJC as it executes the reference from the governments regarding investigating the feasibility of establishing a demonstration watershed board and its implementation of the reference on diversion, consumption and transfer of international waters.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies

SCOPE: The scope of activities under this item is determined annually based on the requests from USACE Commands and Laboratories to meet high-priority needs. These items are not covered under regular Civil Works GI and O&M funding programs. Major activities to be undertaken in the program generally include the collection of basic hydrologic data and the studies of these data for major storm events or certain special hydrologic processes. The information to be derived from this program will improve hydrologic engineering techniques for the planning, design, construction, and operation of water resources projects. The program consists of four sub-items: Storm Studies, General Hydrologic Studies, Sedimentation Studies, and Stream Flow and Rainfall Data.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$ 2,000,000
Allocation Requested for FY 2005	300,000
Balance to Complete Five-Year Program after FY 2005	1,700,000
Allocation for FY 2004	260,000
Change in FY 2005 from FY 2004	40,000
Average Annual Allocation for FY 2000-2004	266,600

JUSTIFICATION:

1. Storm Studies: The Storm Studies Program is a continuing investigation of major storms for the purpose of accumulating comprehensive rainfall data. These data are used to refine the regional hydrometeorological information throughout the nation. The up-to-date hydrometeorological information is essential for design of new projects as well as for safety assessment of existing projects. We have substantial need for hydrologic data for initiation and completion of water resources studies. These data are required in the evaluation of flood-producing potentials of river basins, and constitute the major portion of the basic data used in probable maximum precipitation determinations. Funds in the amount of \$100,000 will be required in FY 2005 to work on several storm studies. Study of the storm occurred in November 2001 over the Big Island of Hawaii will be initiated. Studies of storms occurred in July 1991 west of St. Louis County, River des Teres, MO; July 1990 at eastern NE and western IA; June 1991 at Elkhorn River Basin, NE and storm study of the Jan 1982 event in San Francisco Bay area will be continued. During 1997, wide-spread flooding occurred across the nation. Therefore storm studies are also planned for the 1997 events occurred over the San Joaquin, CA and the Red River of the North (SD & ND) basins.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies (continued)

2. General Hydrologic Studies: Studies under this sub-item include needed improvement in the analysis of rainfall-runoff relationships, flood frequency, snowmelt studies, hydrograph development and routing at selected watersheds, model calibrations in urban areas, analyses of past floods, methods for the hydraulic analysis of non-gaged streams, and other studies of related hydrologic nature. Studies of new techniques to improve the accuracy of hydrologic modeling require additional resources. New radar applications in rainfall-runoff forecast is an immediate concern. Funds in the amount of \$100,000 in FY 2005 will be required to continue this sub-item at a level to insure proper and orderly progress. In New England region, a continuing comprehensive hydrologic analysis of 1987 flood event will provide resource data for future potential planning and design studies, as well as reservoir operation. An effort which began in FY 1985 on re-examination of water yield in Corps reservoirs is continuing. A study on rainfall induced by Hurricane Floyd during September 1999 over the Neuse and Tar basins in North Carolina began in FY 2003.

3. Sedimentation Studies: The program is a continuing effort in which funds are used for conducting non-project sedimentation studies, and for the Corps share of an interagency sediment investigation program. The sedimentation studies include: promoting and supporting the standardization and development of equipment, criteria and methodology for the collection, analysis of suspended and bedload sediment characteristics of natural streams; and laboratory studies. The Hydraulics Laboratory, Waterways Experiment Station is sponsored by the Federal Interagency Sedimentation Committee (members from 18 agencies) and constitutes the major work effort under this sub-item. Funds in the amount of \$50,000 in FY 2005 will be required to support the Federal Interagency Sedimentation Project (FSIP) located at the Waterways Experiment Station.

4. Streamflow and Rainfall Data: This is a continuing program in which funds are used for installation and operation of hydrometeorology gages of non-project nature that are needed by the Corps in addition to the stations in the cooperative programs conducted by the U.S. Geological Survey and the National Weather Service for the Corps. Additionally, gages are needed to observe historical high water marks for validation of hydrologic models. An amount of \$50,000 in FY 2005 is required to continue the establishment and operation of these special-purpose gages, and to determine historical flooding in urban sites.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies (continued)

ACCOMPLISHMENTS:

1. Storm Studies: This continuing program was organized in 1939 for the purpose of investigating rainfall from major storms of record throughout the entire United States. The selected storms are analyzed for frequency, associated runoff and precipitation data. These efforts are coordinated with the National Weather Services (NWS) Hydrometeorological Branch and the resulting data from these studies are used in design of water resources project throughout the country. During the period, Corps offices have gathered data on other major storms, reviewed the scope and interim results of ongoing studies by NWS on development of standard project and probable maximum storms at various basins throughout the United States and territories. Storm studies are being utilized in probable maximum precipitation studies in coordination with NWS for northwest, California and southwest United States.

2. General Hydrologic Studies: Examples of some of the more important studies accomplished under this program are: determination of rainfall-runoff relationship in urban areas; general hydraulic model calibration; snow cover surveys; and adaptation of hydrologic programs to CADD equipment. Work continued on the regional frequency studies for three major river basins in the North Central States. The long-term foothill streams of Colorado flash flooding project progressed as scheduled. Particularly encouraging to date are the data developed for rainfall-runoff on small watersheds and evaluation of flood potential in connection with design of structure located in the flood basin. Works continue on the water yield study.

3. Sedimentation Studies: All of the funds allotted to this sub-item is to assist in financing the Corps share of the cooperative Interagency Sedimentation Project at the Hydraulics Laboratory, Waterways Experiment Station.

4. Streamflow and Rainfall Data: Stations funded under this sub-item are generally established and operated several years prior to anticipated authorization for project-type activities, in order to provide a background of observed data on which to base the planning and design of projects. Progress continues at these gage sites to collect hydrometeorological data in flood prone areas to document historical flood and calibration of hydrologic models.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies (Continued)

FISCAL YEAR 2005: The appropriation requested for FY 2005 is required to continue the Hydrologic Studies Program at the level required to meet high-priority needs.

<u>ITEMS</u>	<u>FY 2004</u>	<u>FY2005</u>
1. <u>Storm Studies</u>	90,000	\$ 100,000
2. <u>General Hydrologic Studies</u>	85,000	100,000
3. <u>Sedimentation Studies</u>	45,000	50,000
4. <u>Streamflow and Rainfall Data</u>	<u>40,000</u>	<u>50,000</u>
TOTAL	260,000	300,000

COORDINATION: The storm studies are prepared by USACE commands and are reviewed by the National Weather Services in the preparation of probable maximum precipitation estimates for the Corps. The Interagency Sedimentation Project is conducted cooperatively, and jointly funded, by eight Federal agencies. Information concerning streamflow and rainfall data collection by the Corps under this activity is made available to the U.S. Geological Survey and the National Weather Service.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(5) Scientific and Technical Information Centers

SCOPE:

Five information analysis centers (coastal engineering, cold regions engineering, concrete technology, hydraulic engineering, and soil mechanics) located at the U. S. Army Engineer Research and Development Center provide the major interface between the Corps of Engineers and the public and private sectors to gather and disseminate information as required by PL 99-802, Federal Technology Transfer Act of 1986. The function of each center is to acquire, examine, evaluate, summarize, and disseminate newly published scientific and technical information generated within the Corp of Engineers and other activities in the U.S. and abroad.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$ 600,000
Allocation Requested for FY 2005	78,000
Balance to Complete Five-Year Program After FY 2005	522,000
Allocation for FY 2004	65,000
Change in FY 2005 from FY 2004	13,000

JUSTIFICATION:

Public Law 99-802, Federal Technology Transfer Act of 1986, requires technology transfer from Federal agencies to the private sector. In addition, both the Department of Defense and the Department of the Army have objectives of supporting the information needs of engineers and scientists and eliminating unnecessary duplication of R&D. The specified information centers, supported by their host laboratories, critically evaluate and summarize the technical validity and merits of published and unpublished research and technical publications on design, construction, or other technology utilization. User communities have been well established and distribution lists for technology transfer are continuously updated. Electronic media including the World Wide Web are used where appropriate. The effectiveness of activities and services is evaluated on a continuing basis, and technology transfer products and methodology are revised when appropriate.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(5) Scientific and Technical Information Centers (Continued)

ACTIVITY IN FY 2004:

The Corps of Engineers has moved onto the information highway and is making major use of the World Wide Web (WWW) for technology transfer. The WWW is widely accessible by both the public and private sectors and provides rapid transfer, at significant cost savings, of technical data, bulletins, general information on ongoing studies, technical notes, and ultimately technical reports. The information centers and their host laboratories are now maintaining WWW homepages with links to other related homepages. Recent establishment of internal networks, as well as a Corps-wide network, along with connection to the Internet, have provided a major leap forward in communications at a significant reduction in transmittal costs. Several thousand technical inquiries are received annually, with the Internet playing an increasingly major role. Inquiries are received from Federal, state, and local government activities, universities, private sector engineers and scientists, and concerned citizens.

Technical Field

Subjects

Coastal Engineering	Wave data and predictions, shore processes, inlet dynamics, navigation channels and structures, harbors, and coastal construction
Cold Regions Engineering	Ice engineering, meteorology, climatology, geophysics, geology, remote sensing, environmental engineering
Concrete Technology	Cements, concrete, aggregates, concrete construction, concrete repair and rehabilitation technology
Hydraulic Engineering	Hydraulic, hydrologic, water resources, and sedimentation of streams, rivers, waterways, reservoirs and natural impoundments; estuaries, inland and coastal groundwater; fishery systems; and hydraulic structures of all types
Soil Mechanics	Embankment and foundation engineering, earthquake engineering, engineering geology, and rock mechanics

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(5) Scientific and Technical Information Centers (Continued)

<u>Information Analysis Centers</u>	<u>FY 2005</u>
Coastal Engineering	\$15,000
Cold Regions Engineering	15,000
Concrete Technology	18,000
Hydraulic Engineering	15,000
Soil Mechanics	<u>15,000</u>
	\$ 78,000

COORDINATION:

The Information Analysis Centers and their host Laboratories distribute reports, technical notes, computer programs, GIS data, abstracts, information bulletins, and other scientific and technical information to the Defense Technical Information Center (DTIC), Corps libraries, depository libraries, and identified user communities to ensure wide circulation and availability. WWW homepages are maintained on the Internet for public accessibility. Reports are also available for searching through the Corps Library Program's computer system LS/2000. DTIC publicizes reports through its own DOD database and forwards the reports to the National Technical Information Service (NTIS), Department of Commerce. NTIS places reports into a compendia of Selected Water Resources Abstracts and an annual cumulative edition, with conveniently indexed and cross referenced identification of what is being or has been done in water resources research and related scientific and engineering fields by whom, where, and when.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs



(6) Coastal Field Data Collection

SCOPE:

The nationwide program is designed to systematically measure, analyze and assemble information required to accomplish the Corps mission in coastal navigation, storm damage reduction, and evaluation of harbor entrance impacts on adjacent shores. The data directly support project comprehensive regional and local planning, research, design, construction, operation, and maintenance. Cost-effective mission accomplishment requires long-term and systems/regional data that encompasses winds, waves, currents, water levels, and bottom configuration, sediment characteristics, and geomorphologic data. In particular, wave data are the key design parameter for coastal projects. For example, a 20% error in wave height leads to over a 70% difference in stone size for navigation structures. If the error in wave height leads to over specifying stone size, the construction costs are much higher than necessary. If stone size is too small, structures fail or have unnecessary life-cycle repair costs. With 800 navigation projects to maintain and repair (25% are more than 50-years old), cost attributable to having no data or poor data would be significant. These data are either unavailable in existing archives, are of uncertain or poor quality, or are too sparsely distributed temporally and/or spatially to have statistical value. The required data are regional in nature and not properly chargeable to authorized projects. Sufficient time is not available prior to or during project preauthorization planning studies to accumulate the years of base-line data necessary for adequate assessment of technical, economic, and environmental feasibility. Acquisition of the information will be accomplished through the concurrent accumulation of complementary items, each of which is unique and contributes certain critically needed data. The program is organized into seven sub-items, all related to field data: (1) Wave Information Studies; (2) Field Wave Gauging; (3) Field Research Facility Measurements; (4) Participation in the National Ocean Partnership (NOPP) and its coastal observing effort, (5) Southern California Beach Measurement Program, (6) Monitoring for Typhoon and Hurricane impacts in the Pacific and Caribbean Islands, and (7) Evaluation of Shore Protection Projects .

JUSTIFICATION:

1. Wave Information Studies. Numerical simulation techniques are used to estimate directional wave environments from weather information for all the Great Lakes and the nations ocean coastline. Most historic wave gauge data are non-directional; eventually hindcast data will provide 20 years of spatially and temporally consistent directional wave statistics. This information is paramount to the functional/structural design and economic evaluation of coastal navigation projects and of fundamental use to coastal Regional Sediment Management (RSM) studies. Additionally, detailed wind information is produced. These data are made available to Corps of Engineers Districts via interactive web access. Data users are also provided with statistical representations desired of waves. Once the 20-year database is complete, it will be updated annually. Developing and evaluating the hindcast wave database requires funding of \$225k in FY05.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

2. Field Wave Gauging. High-quality wave data are needed to predict harbor shoaling, harbor oscillation, jetty stabilization, etc. These data are imperative for operational guidance of dredging, navigation, maintenance, emergency operations, etc. Gauging efforts are coordinated with the National Oceanic and Atmospheric Administration (NOAA), and with the Scripps Institution of Oceanography through the State of California (<http://cdip.ucsd.edu>). These data will become part of the Corps' contribution to the interagency effort for an *Integrated Ocean Observation System* (IOOS) under the National Ocean Partnership Program (NOPP). Upon acquisition, the data are analyzed and made available in real-time to CE engineers, planners, and managers along with the general public via the Internet. Cooperative agreements for the collection of wave data have been executed with the states of California, Alaska, Florida, Hawaii, Washington, Texas, and Virginia. These agreements provide a mechanism for other Federal, state, and local agencies to cooperate in the expansion of the program and the collection of coastal data. Funds in the amount of \$175k in FY05 will be needed to maintain the existing observing program; to expand the gauging network to provide coverage where it is inadequate and to support Regional Sediment Management; and to develop a pilot effort of real-time shallow water forecast to provide the Corps and other users with wave estimates in between the existing measurements.

3. Field Research Facility Measurements. Critical to measuring, analyzing and providing useful coastal data products for the CE Districts is the collection of intensive, long-term, high-resolution data for improving project design and reducing costs. The Field Research Facility (FRF) at Duck, North Carolina (<http://frf.usace.army.mil/>), is a unique real-world experimental facility that incorporates high-resolution instruments with comprehensive suites of environmental sensors to provide wave, current, meteorological, bathymetric, and topographic data. The facility is used to evaluate wave measurement techniques and equipment, test experimental oceanographic instrumentation and sensors, collect high-resolution continual data throughout major storms, conduct large interagency field experiments, such as SandyDuck and Duck94, and collect spatially and temporally intensive long-term base measurements required to understand complex coastal processes. These data are made available via an interactive website to engineers and scientists in the Corps, DOD Laboratories, other agencies, universities, and the private sector for researching coastal processes and for developing and verifying numerical models and coastal engineering tools that predict wave environments and sediment movement affecting coastal projects, navigation safety, dredging quantities and project impacts. They also are crucial for evaluating the characteristic of data products produced by other sub-items and improving their quality and completeness. As a coastal observatory, the FRF will be part of CE's contribution to the developing national Integrated Ocean Observing System (IOOS). Funds in the amount of \$900k are required for the base measurement program at the Field Research Facility and to expand the suite of measurements made at the FRF in support of the IOOS.

4. Participation in the National Ocean Observing Program. This task objective supports CE's participation in the National Ocean Partnership Program (NOPP, <http://www.nopp.org>). This interagency program involves 15 other Federal Agencies (Navy, NASA, NSF, NOAA, USGS, DoE, EPA, DARPA, DoS, USCG, ONR, OSTP, Homeland Security, MMS, OMB) with the objective of advancing ocean research through partnerships. The Corps' is also a signature member of Ocean.US, the NOPP office established to organize and promote the national Integrated Ocean Observing System (IOOS). This program will lead to a wide range of real-time coastal data being made available to CE users and partners for use in planning, operations, and emergency response. Funding required to participate in NOPP and to support the Ocean.US both financially and in kind is \$75k for FY05.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

5. Southern California Beach Processes Study (SCPBS). Planning for Regional Sediment Management (RSM) activities (shoreline protection, beach maintenance, coastal inlet dredging and related engineering activities) requires an understanding of the coastal processes and sediment budget over regions extending tens of miles up and down coast. In this task the coastal processes will be monitored along a 55-mile-long littoral cell extending from Dana Point to Point La Jolla in Southern California (<http://scdip.ucsd.edu/SCBPS/homepage.shtml>). This unique populous region is characterized by narrow continental shelves, swell-dominated wave climates and cliff-backed beaches. Monitoring will involve airborne LIDAR and video techniques for determining seasonal beach and cliff variation in this region combined with wave measurements and modeling to quantify the impact of coastal storms on beach and cliff changes over multiple years. Because of the comprehensive nature of the monitoring, these data will be used to develop an analysis of the potential risk associated with use of a less-comprehensive monitoring program for application to other regions of the country. This effort will contribute new findings and insight to ongoing RSM research activities. Funds in the amount of \$200k in FY05 will continue this program of regional study.

6. Pacific Islands Land Ocean Typhoon (PILOT) Experiment. This task seeks to collect cross-island wind, wave, wave and water level data documenting hurricane and typhoon passage in the Pacific and Caribbean islands. Tropical cyclones affect islands differently than the continental United States. Consequently, existing forecast models, intensity scales, and design tools for cyclones are inappropriate or unproven for use in the islands. The objective of this effort is to provide the quantity and quality of timely data required to more accurately document characteristics and effects of episodic cyclonic activity in the islands, which specifically address needs developed by the Corps' Island Task Force. Measurements will most likely be made on the Island of Guam because of its likelihood of a Typhoon passage. Supporting measurements will also be made in Hawaii and will take advantage of the expertise available in tasks 1-4 above. Funding of \$200k for FY05 will continue this major field measurement effort.

7. Performance of Shore Protection Projects. The objective of this task is to improve future shore protection projects through evaluating the performance of existing projects, and through augmenting the field monitoring programs of selected new projects. Existing projects will be examined for their physical, economic, and benefit performance. In particular, the success in the use of modern modeling tools and monitoring techniques for developing shore protection project designs will be examined. Evaluation tools and design improvement recommendations will be developed. Project summaries including surveys, specs, and performance data will be collected and made available via the Internet. Standardized web templates for migrating project information to the web will be developed. This effort will maximize the use of existing project performance data and directly responds to district requirements for tools and techniques to analyze performance data. To develop an initial pilot effort, funding of \$100k in FY05 is required.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

SUMMARIZED FINANCIAL DATA:

<u>PROGRAM ITEM</u>	<u>FY2005</u>
1. Wave Information Study	225,000
2. Field Wave Gauging	175,000
3. Field Research Facility	900,000
4. Participation in the National Ocean Observing System	75,000
5. Southern California Beach Profile Study	200,000
6. Tropical Cyclone Monitoring in the Islands	200,000
7. Performance of Shore Protection Projects	<u>100,000</u>
Total	1,875,000

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs (continued)

(7) Transportation Systems

SCOPE: The Transportation Systems Program supports Corps districts and Headquarters personnel in accomplishing their navigation project planning and evaluation responsibilities through the provision of integral information components. The process of planning improvements to waterway and harbor navigation projects necessitates the consideration of the needs, opportunities, benefits, and costs associated with project improvements within the context of the project-specific area as well as within the context of the overall national transportation system. The transportation systems program is managed by CECW-P and is a continuous, on-going effort to ensure the development of sound analytical techniques, tools and methods; the development of deep draft and shallow draft vessel operating and replacement cost data which can be applied by District offices; the provision of timely updates of the world deep draft vessel fleet, commodity, and cargo flow forecasts; the publication of reports documenting the results of research associated with the Transportation System Analysis program; and the provision of technical services and support to District offices and Headquarters personnel. The goals of the Transportation System Program are as follows: (1) to improve the technical quality and accuracy of navigation planning studies as well as provide for consistency in analytical procedures across the wide array of planning conditions encountered by District personnel; (2) to improve the strategic planning of navigation systems improvements; and (3) to reduce the cost of planning and operation of the navigation system. These goals are accomplished by providing District and headquarters analysts with useful and consistent information and analytical tools and procedures, and result in an end product which reflects a responsible and worthwhile investment of government funds.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-09) Program Cost	\$ 4,500,000
Allocation Requested for FY 2005	375,000
Balance to Complete Five-Year Program after FY 2005	4,125,000
Allocation for FY 2004	330,000
Change in FY 2005 from FY 2004	45,000

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(7) Transportation Systems (continued)

JUSTIFICATION: The \$375,000 requested in FY 2005 for Transportation Systems would be used to update models and analysis used for the planning and evaluation of ports, harbors and inland waterways, and the modernization of planning methods and associated computer models to support District navigation studies nationwide. Funds would be used to continue to develop, improve, and provide inland and ocean vessel operating costs used to estimate transportation cost reduction benefits for Corps navigation studies; to continue to develop and provide commodity and fleet forecasts of waterborne traffic for deep and shallow draft navigation projects from industry forecasting experts, and to update deep draft vessel characteristics for use by Corps field planners; to provide rail, barge and truck models for use in estimating origin-destination transportation cost savings by Corps Districts; to provide consulting technical support services to Corps District offices; to complete review of the tidal-delay model that would standardize related procedures, thus minimizing the effort and cost for each study needing to evaluate this component.

ACCOMPLISHMENTS: FY 2004 accomplishments are: Updated and published FY 04 shallow draft vessel operating costs; updated fuel costs and posted to Headquarters Homepage; completed an update of vessel characteristics for ocean-going barge costs; completed draft of deep-draft vessel operating cost applications manual; secured and distributed information from Global Insight, Sparks Companies, and REEBIE Transportation models; updated the barge, rail and truck transportation models; and completed the desktop tidal delay model.

ACTIVITIES FOR FY2005: FY2005 funds will be used to update and publish deep draft vessel operating costs; update fuel costs; obtain world trade and commodity flow forecasts; update and distribute subscription materials from Global Insights, Sparks Companies, and the REEBIE Transportation models; and initiate an update of the Inland Waterway Review, which will highlight cargo trends and lock & dam operations and investments throughout the inland waterway system.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(8) Environmental Data Studies

JUSTIFICATION: The Environmental Data Studies Program request is \$94,000. Funds will be used to continue and to improve environmental program management performance. Funds will be used to continue development of an Internet accessible Environmental Database System, to support collection and sharing of environmental information for national and regional inventories and assessments and train field personnel in its access and use. We will begin development of a prototype environmental trend analyzer; coordinate our performance measurement and data cataloguing efforts with related environmental policy studies and GPRA according to work plans developed in FY 2001.

ACCOMPLISHMENTS FOR FISCAL YEAR 2002:

Developed a working prototype of the Environmental Database System (EDS). Using only an internet browser such as Netscape, EDS-Atlas allows researchers to develop performance statistics for selected states, Corps offices or other geographic areas, as well as for each of the major Corps environmental programs (Section 1103, 1135, 204, etc.). 105 CAP reports have been reviewed and entered in the database (1135, 206 and 204). EDS-Encyclopedia, accessible through the same address is a research tool for those engaged in environmental studies. EDS-Encyclopedia provides ratings for the quality and ease of use of each linked site. It also provides "deep" links directly to data sources, rather than the more commonplace links to agency homepages that require considerable additional search time.

ACCOMPLISHMENTS FOR FISCAL YEAR 2003:

1. Update data for Corps projects that are already in the EDS but have proceeded to another stage. Complete quality control for entered reports.
2. Continue to add new CAP projects to the database. Expand the database to specifically authorized environmental restoration projects.
3. Design a strategy to track the Corps mitigation for environmental impacts from Corps projects.
4. Design and initiate efforts to support environmental reporting per GPRA.
5. Lessons learned report on IWR review of Environmental reports for performance data.
6. Continue to maintain, add and rate websites in Encyclopedia.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(9) Remote Sensing Systems Support

This item supports the overall technology transfer requirement of the Corps Civil Works Program for Remote Sensing systems, which is the responsibility of the Cold Regions Research and Engineering Laboratory (CRREL) through its Remote Sensing/Geographic Information Systems (GIS) Center of Expertise.

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY2005-2009) Program Cost	\$1,500,000
Appropriation Requested for FY 2005	\$152,000
Balance to Complete Five-Year Program after FY2005	\$1,348,000
Allocation for FY 2004	\$130,000
Change in FY 2005 from FY 2004	\$22,000

JUSTIFICATION:

The Remote Sensing/GIS Center is the Corps' Center of Expertise for Civil Works Remote Sensing and GIS technologies, providing mission essential support as part of the new USACE 2012 organization. Through centralized management of this function, the Center provides cost-effective support through technology transfer and applications development for Corps mission responsibilities in all business practice areas: navigation, flood and coastal storm damage reduction, hydropower, regulatory, environment, emergency management, recreation, water supply, and work for others. Continuing interaction with other researchers and practitioners throughout the Corps, government, the private sector, and academia assures that state-of-the-art and state-of-the-practice knowledge of evolving trends that are important are available for the Corps and that duplication of effort is avoided.

Declines in manpower require working smarter, better, and faster. Contributing to this effort, the Center develops approaches for the integration of data from the disparate sources necessary for regional sediment management, basin studies, water control, land and water resource management, support to emergency management, and compliance with the attendant environmental regulations and related policies. The Center maintains cognizance of state-of-the-art sensors, data collection, analysis, and storage systems, commercial software, and bridging software that integrates these and operational technologies into the Corps divisions, districts, and other agencies' activities. Technology is transferred through telephone and short no cost assistance to the field. The existence of the Center ensures that the necessary support can be rapidly directed toward solving operational problems that require specialized expertise. The PROSPECT training program in remote sensing and GIS, managed by Center staff, provides another avenue for the transfer of knowledge to those who are, or soon will be, using these technologies. Training also is conducted in the field, through workshops and conferences. White papers, pilot projects, Corps and other publications, including Engineering Letters, Circulars, and Manuals, and the Internet, also are used to transfer procedures and lessons learned to end users.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(9) Remote Sensing Systems Support (continued)

ACCOMPLISHMENTS IN FY 2004:

As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS.

Acquired and distributed enterprise geospatial data to all Corps entities.

Assisted with establishing the Corps' Geospatial Community of Practice (COP), and provided technical support.

4. Continued technology transfer through training courses, briefings, technical papers, technical demonstrations, pilot programs, and conferences.
5. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: Informatics Strategic Plan Program Development Team and Plan co-author; Common Delivery Format team member; Science and Engineering Technology Tools Program Development Team and subteam leader; Readiness XXI Technology Transfer Program Development Team; Geospatial Operations and Maintenance Business Interlink (gORM) team member; and Hydrology and Hydraulics modeling software development and support team member.
6. Developed and enhanced national geospatial data viewers for Corps' programs.
7. Major update of the PROSPECT Introduction to GIS course.
8. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development of enterprise geospatial data approaches.
9. Supported one-stop service requests from Corps districts and divisions.
10. Developed and distributed national geospatial data coverages for emergency management and other Corps business practice applications.
11. Member of the CADD/GIS Technology Center's advisory support team.
12. Managed and provided administrative support of the Civil Works Geospatial Research and Development Program.
13. Participated in development of a redefined approach to Civil Works R&D to better meet the Corps' strategic requirements.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(9) Remote Sensing Systems Support (continued)

14. Sponsored and participated in program development of national and international remote sensing and GIS conferences.

Completed a new version of the Corps' Remote Sensing Manual that includes high resolution satellites and hyperspectral and digital airborne systems.

Maintained a website to support the transfer of technology from the Civil Geospatial R&D Program to the field.

Provided civil funds to the CCIO as needed to support field imagery requirements.

PROJECTED ACCOMPLISHMENTS IN FY 2005:

1. As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS.
2. Provided guidance and technical support to the Corps' Geospatial Community of Practice (COP).
3. Continued technology transfer through training courses, briefings, technical papers, technical demonstrations, pilot programs, and conferences.
4. Supported one-stop service requests from Corps districts and divisions.
5. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: Informatics Program Management Team; Common Delivery Format team member; Science and Engineering Technology Tools Program Management Team; Readiness XXI Technology Transfer Program Management Team; Geospatial Operations and Maintenance Business Interlink (gORM) team member; and Hydrology and Hydraulics modeling software development and support team member.
6. Led ongoing review of Geospatial Civil Works Research and Development Program.
7. Sponsored and participated in program development of national and international remote sensing and GIS conferences.
8. Major update of the PROSPECT Intermediate GIS course.
9. Developed and enhanced national geospatial data viewers for Corps' programs.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(9) Remote Sensing Systems Support (continued)

10. Initiated a new Corps' Geographic Information Systems Manual.
11. Developed and distributed national geospatial data coverages for emergency management and other Corps business practice applications.
12. Managed and provided administrative support of the Civil Works Geospatial Research and Development Program.
13. Member of the CADD/GIS Technology Center's advisory support team.
14. Provided technical guidance and content concerning remote sensing and GIS to the Technical Excellence Network.
15. Provided civil funds to the CCIO as needed to support field imagery requirements.
16. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development of enterprise geospatial data approaches.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collection and Study of Basic Data

c. Other Programs

(10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center

SCOPE: This effort provides technical support to engineers and scientists utilizing CADD, GIS, and facility management technologies in the planning, design, construction, operation and maintenance of Corps projects. As there is no way of calculating the benefits which individual districts/projects receive from the CADD/GIS Center, the Corps does not propose to charge projects and programs for the Civil Works share of its maintenance costs.

In 1992, the former Army Corps of Engineers' Computer Aided Design and Drafting (CADD) Center, located in the Army Engineer Waterways Experiment Station (WES), was expanded to an Army, Navy, Air Force (Tri-Service) center, including the addition of Geographic Information Systems (GIS) technology, by a joint agreement between the Corps, the Naval Facilities Engineering Command, and the Air Force Civil Engineer. Its purpose was to reduce duplication of effort between the three services in the management of CADD/GIS technology for facilities and environmental engineering. Since that time, the Defense Logistics Agency (DLA), the General Services Administration (GSA), USGS, FBI, Smithsonian Institution, National Capital Planning Commission, U.S. Marine Corps, U.S. Coast Guard, National Institute of Building Sciences, NIMA, EPA, and NASA have joined this effort. As a result, this Center is a multi-agency vehicle to set standards, coordinate CADD/GIS systems uses, promote system integration, support centralized acquisition, and provide assistance for the installation, training, operation, and maintenance of CADD/GIS systems within the DoD facilities and environmental communities, including the Corps districts. All Corps districts that use CADD and GIS in mapping, planning, real estate, design, construction, operations, maintenance, and homeland defense and readiness benefit from the Center's efforts.

For FY 2004, the OMA funding portion was \$2,096,000. The Civil Works portion was \$307,000, the Naval Facilities Engineering Command portion was \$250,000, the Air Force Civil Engineer Command portion was \$100,000, and the U.S. Marine Corps portion was \$100,000 for a total of \$3,236,000. The \$400,000 requested for FY 2005 for the Civil Works portion will support approximately 1,000 workstations and 2,000 users of CADD/GIS technologies for Civil Works Projects.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$3,250,000
Allocation Requested for FY 2005	402,000
Balance to Complete Five-Year Program after FY 2005	\$2,848,000
Allocation for FY 2004	293,000
Change in FY 2005 from FY 2004	109,000
Average Annual Allocation for FY 2000-2004	\$450,000

JUSTIFICATION: All Corps districts use CADD and GIS computer systems for Civil Works engineering, design, mapping, planning, and facility management. All engineering drafting tables have been replaced with CADD platforms or computer mapping systems and most Corps environmental and natural resource analysis are being performed on GIS platforms. The geospatial data standard efforts of the Center were coordinated with the American National Institute of Standards to develop a National GIS Standard which was approved in November 2001 and includes civil works and homeland defense features. Standards and productivity

APPROPRIATION TITLE: General Investigations, FY 2005

enhancement tools developed by the Center are used for both in-house and contractor produced drawings, maps and analyses, which assure that all Corps offices

2. Collection and Study of Basic Data

d. Other Programs

(10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center (continued)

have the ability to exchange their work among themselves and with others, including the private sector. The Center is actively coordinating its CADD standards 2.0. with the National Institute of Building Sciences and has created a National CADD Standard, thus reducing the redundancy with the private sector and reducing cost for both government and the private sector. The Center ensures that the Corps obtains the maximum return on its investment in CADD and GIS by coordinating development efforts and distributing end products to Corps offices. The CADD and GIS systems at field offices can achieve maximum productivity when they take advantage of the economies of scale offered by sharing the development and use of common data standards, procedures, and applications. This sharing is accelerated through a concerted effort by the Center, working with various field working groups, to draw from field expertise and dissemination of this knowledge in the form of lessons learned and standards to benefit all Corps users. Comprehensive data standards supported by the Center permit government and industry users to produce equivalent designs, maps and analysis on a variety of computer systems using commercial off-the-shelf CADD and GIS software.

ACCOMPLISHMENTS IN FY 2004:

1. Release 2.3 of the A/E/C CADD Standard (both document and software tools) was released on CD-ROM and via the web. This released was distributed by several software vendors as part of their application (e.g. ProSoft). Software updates included: (1) the File Converter, which can convert a CADD file that conforms to the former Corps EM 1110-1-1807 CADD Standard to Release 2.1 of the A/E/C CADD Standard, and (2) the File Manager, which assists users in naming files so they are compliant with Release 2.1 file naming conventions. Implementation software for both MicroStation and AutoCAD were released. Several training classes were taught.

2. The GIS Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) Release 2.4 was completed. The SDSFIE included continued development of the GIS data standards for Civil Works activities, which provide a common data format for the development of GIS on civil works projects, thereby cutting costs and allowing sharing of data sets among government agencies and the private sector. Homeland Security data sets and symbology sets were completed in support of USGS and NIMA to analyze data more quickly and facilitate data sharing and upward reporting. Electronic tools were developed to facilitate the construction of GIS datasets for various GIS vendor products (e.g. Intergraph's GeoMedia and ESRI's ArcGIS). Several training courses on implementation and use of GIS data standards were conducted.

3. Enhanced the Electronic Bid Solicitations (EBS) program by establishing a Central Listing of all bid solicitations from DoD agencies and continued to work with *The Bluebook* company to make solicitations available to a wider audience. The Center instituted an EBS hosting service at WES to support those offices/agencies lacking the expertise to develop their own. EBS services for the Corps were established at the Center under the name Electronic Contract Solicitation.

4. Release 2.4 of the facility management standard (FMSFIE) was completed and distributed. Continued the incorporation of "legal" reporting requirements

APPROPRIATION TITLE: General Investigations, FY 2005
(data) necessary for Army Corps of Engineers, Army, Air Force, Navy, Coast Guard, GSA, and OSD.

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collections and Study of Basic Data

c. Other Programs

(11) Flood Damage Data Program

SCOPE: The Flood Damage Data Program is required to facilitate the collection and maintenance of basic flood damage data to support Corps field offices in accomplishment of flood damage reduction studies. Planning and evaluation of flood damage reduction projects requires knowledge of actual damages caused to various types of properties. The relationships between flood depth, flood duration and velocity, value and type of property, and the amount of damage are essential to making accurate and supportable estimates of the value of projects. The distributions of damages resulting from the various factors involved are needed for the risk analysis framework adopted for water resource studies. Damage data are obtained in rare instances when a damaging event occurs and funded studies are underway. However, in most instances when flooding occurs there are no current studies in the area or other funding mechanism to collect the requisite data to be used in future analysis or to report and accurately record the damages incurred and account for the effect of the factors that caused the damages. Previously no centralized flood damage data source existed which retrieved basic data for research efforts and for specific project studies. The major purpose of the program is to improve the technical quality and accuracy of flood damage data, to improve the understanding of the interrelationships of the characteristics of flooding on property damage, to improve the formulation of flood damage reduction projects, and reduce the costs of feasibility studies. Coastal damage data collection will be needed to adapt to new coastal protection policies and to respond to concerns from the Office of the Assistant Secretary of the Army (Civil Works) in the review of recent coastal protection projects. The activities of the program are to: (1) conduct actual flood damage surveys following flood events for riverine and coastal events; (2) develop, maintain, and improve the economic database for flood damage reduction projects; (3) calculate flood depth-damage functions for riverine and coastal flooding based on actual damage data; and, (4) develop and maintain a floodplain inventory application that would be used to apply flood damage estimation models to feasibility, reconnaissance, and continuing authority studies.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Costs	\$3,500,000
Allocation Requested for FY 2005	248,000
Balance to Complete Five-Year Program after FY 2005	3,252,000
Allocation for FY 2004	\$195,000
Change in FY 2005 from FY 2004	53,000

APPROPRIATION TITLE: General Investigations, FY 2005

2. Collections and Study of Basic Data

c. Other Programs

(11) Flood Damage Data Program (continued)

JUSTIFICATION: The \$248,000 requested in FY 2005 for Flood Damage Data would be used to develop and maintain data collection survey forms and data collection techniques, to collect post-flood damage data, to employ the flood damage database to estimate a National model where regional or local flood characteristics can be specified to estimate flood damage relationships, to update and maintain a computer application for applying flood damage models to floodplain inventory data, and to develop generic business flood damage relationships. Funds would be used to monitor data collection, to collect damage data for riverine and coastal flood events, and data analysis and the development of generic damage relationships.

ACCOMPLISHMENTS:

1. Flood damage surveys, using material from OMB-approved questionnaires have been developed, reviewed, and pre-tested.
2. Data collection techniques and data tabulation procedures have been developed. Data collection procedures have been documented in a primer for Corps field personnel and contractors.
3. Over 2,200 residential surveys and approximately 900 nonresidential surveys have been completed for properties in 19 states. A database has been created from these surveys and analysis is continuing. Several reports have been issued documenting the case studies and damage function computation.
4. Generic residential content and structure damage functions have been released for single-family homes.
5. Generic business structure damage functions and vehicle damage functions have been computed and documented.
6. A research design report has been completed for further development of risk-based damage function calculation, using additional data from building industry component costs models and data collected as part of this program.
7. A residential depth-damage function application has been released for Corps-wide use. The application will be used to determine the depth-damage relationships based on building characteristics and county-specific building costs. The model has incorporated structure and content estimation and structure and content damage for a comprehensive array of structure types, foundation types, exterior building material, quality, and period of construction. The model has been released to Corps districts for integration with the HEC-Flood Damage Analysis Package for evaluation of flood damage reduction benefits. Training for the use of the model has been conducted for Corps districts and MSC's at regional workshops.
8. A review of potential methodologies and data sources for estimating flood damage to roads has been completed. A preliminary model for estimating flood damage to roads has been released and field-tested.
9. Approximately 150 records have been collected on homes that have suffered coastal flood damage.
10. A research design report has been completed for further development of risk-based damage function modeling for coastal storm damage.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

The Corps must pursue an aggressive R&D effort to take advantage of rapidly developing technologies and techniques that will promote significant monetary savings and greater reliability, safety, enhanced efficiency, and environmental sustainability in planning, design, construction, operations and maintenance of civil works activities.

The Civil Works R&D program is formulated to directly support the established Business Lines of the Civil Works Program including: flood and coastal storm damage reduction, inland and coastal navigation, environment (including natural resources, compliance, mitigation, and restoration), water supply, hydropower, recreation, emergency management, and regulatory. The Civil Works R&D needs and requirements are identified based on the current Civil Works Program Strategic Plan, Corps divisions and district input, and the existing WRDA authorities. The R&D effort is a problem-solving process by which the Corps systematically examines new ideas, approaches, and techniques and develops field-ready products to improve the efficiency of its planning, design, construction, operations and maintenance activities in an environmentally sustainable manner. The request for \$20,800,000 of General Investigations funds for the FY 2005 program would accomplish the very highest priority R&D needs.

Results of this R&D effort are directly incorporated into practice within the Civil Works Program through revisions or additions to Engineer Regulations, Engineer Manuals, Technical Guidance Manuals, Engineer Technical Letters, or Guide Specifications. Numerous other means of technology transfer are also used such as training courses, workshops, and other professional contacts. The Corps Civil Works R&D Program provides essential Product Lines with field ready end products and a high return on investment for the Corps and the Nation.

COORDINATION:

The Corps conducts Civil Works R&D through the U. S. Army Engineer Research and Development Center (ERDC) and the Institute for Water Resources (IWR). The ERDC consists of seven research laboratories:

- Coastal and Hydraulics Laboratory, Vicksburg, MS
- Cold Regions Research and Engineering Laboratory, Hanover, NH
- Construction Engineering Research Laboratory, Champaign, IL
- Environmental Laboratory, Vicksburg, MS
- Geotechnical & Structures Laboratory, Vicksburg, MS
- Information Technology Laboratory, Vicksburg, MS
- Topographic Engineering Center, Alexandria, VA.

The IWR is located at Fort Belvoir, VA, and its Hydrologic Engineering Center (HEC) at Davis, CA.

Policy guidance and executive oversight are provided by the Civil Works R&D Steering Committee comprised of Deputy Director of Civil Works, CW division chiefs, and the Director of Research and Development. The Directors of ERDC and IWR are responsible for execution of the CW R&D program.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

In order to most effectively use the limited R&D resources and to avoid unnecessary duplication of research effort, the Civil Works R&D Program maintains external technical exchange and technology transfer efforts with other Federal and major water resource agencies including the TVA, Bonneville Power Administration, Western Area Power Administration, EPA, NSF, Department of Agriculture (NRCS), Park Service, NOAA, DOI (USBR, Forest Service, FWS, USGS, DHS (USCG, FEMA, US Border Patrol), DOT (FHWA, FAA, MARAD), NASA, International Boundary Water Commission, International Joint Commission, DOE (NRC, FERC), the Navy, and state and local governments.

Corps researchers also maintain continuing contact with the research activities of universities and industry through regular membership in such organizations as the American Society of Civil Engineers, the Civil Engineering Research Foundation, the American Concrete Institute, the American Society of Testing and Materials, the International Conference on Coastal Engineering, the American Association of Port Authorities, the American Society for Photogrammetry and Remote Sensing, the Coastal Society, the Offshore Technology Conference, International Society of Soil Mechanics and Foundation Engineering, U.S. Society of Dams, and International Committees on Large Dams, the International Association for Hydraulic Research, the Association of American Geographers, and the Permanent International Association of Navigation Congresses. The Corps also participates extensively with the Transportation Research Board, the Water Science and Technology Board, and the National Research Council in coordinating and leveraging research activities.

SUMMARIZED FINANCIAL DATA:

Estimated Five Year (FY 2005 - FY 2009) Program Cost	\$180,000,000
Allocation Requested for FY 2005	20,800,000
Balance to Complete Five Year Program after FY 2005	159,200,000
Allocation for FY 2004	14,950,000
Change in FY 2005 from FY 2004	7,050,000
Average Annual Allocation for FY 2000-FY 2004	24,454,000

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

The proposed FY 2005 R&D Program is structured to directly support the Civil Works Business Lines, their mission requirements and established performance objectives at project, watershed and river basin scales. Components of the R&D program include:

- a. Navigation (to include hydropower)
- b. Flood and Coastal (to include Emergency Management, Water Supply, and Recreation)
- c. Environmental Restoration
- d. System Wide Water Resources

Navigation (to include hydropower)

The Corps provides inland and coastal navigation critical to the national economy and defense. Additionally, Corps projects provide 25% of the Nation's hydropower. Navigation research, which includes hydropower, delivers tools and guidance essential for improved reliability, increased efficiency and sustainable increased capacity of this complex aging transportation/power network. The research framework integrates water dynamics, infrastructure mechanics, advanced materials, power physics, economics, innovative construction, coastal and riverine processes, automated control and monitoring, remote sensing, operations research, stochastic processes and emerging technologies to create effective solutions in perspective with the multiple demands, requirements and constraints of real world commodity transport and power production problems. Research efforts target navigation channels, locks, jetties, breakwaters, dams and power plants to optimize among life-cycle and reliability trade-offs, assure defensible economic assessment, and provide better investment decision tools for predicting performance and deterioration with time, and scheduling and prioritizing maintenance and repairs balanced with the consequences of delays.

Flood and Coastal (to include Emergency Management, Water Supply, and Recreation)

Corps' projects across the Nation prevent flooding and storm damage. In the daily and seasonal operation of hundreds of Corps projects, national requirements for water supply, and opportunities for recreation and environmental stewardship are also balanced. The Nation expects the Corps to guarantee that its existing projects maximize efficiency and effectiveness, and that new projects incorporate the most advanced capabilities in planning, design, construction, operation, and maintenance. Through R&D, the Corps develops technology that will optimize daily operations of water resources projects to meet multiple objectives. Through R&D, the Corps creates new solutions to challenging engineering problems in building, maintaining, upgrading, and operating the Nation's water resources infrastructure. Through R&D, the Corps provides guidance and tools to understand the natural setting of water resource projects, to incorporate environmental & economic objectives, to assess alternative solutions, and to make optimal decisions.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

Environmental

Ecosystem Restoration is a growing focus of the Corps Civil Works program, ranging from large-scale activities such as the Everglades, to small local wetlands restorations. In addition, the Corps carries out environmental and natural resource management and restoration activities on more than 11 M acres of land and water resources. The broad scope of these environmental activities, as well as the frequent changes to the legislative mandates that govern them, demand sound research for expanding technological advances to address these critical needs. The Environmental Technologies research area is a R&D initiative for this purpose. The goal is to provide Corps field personnel with cost-effective/innovative technologies for project planning, design, engineering, operation, and regulatory activities. Product lines include: Environmental Impact Assessment, Ecosystem Restoration and Environmental Stewardship and Management. Environmental studies related to Cross-cutting R&D (i.e., Geospatial, Economics, and Risk) are also addressed. Products are concise, how-to guidance documents that provide rapid/low-cost technologies and methods for high priority field needs. This technology is critical to the success of the Corps' Continuing Authorities Program (CAP) as well as larger GI-funded projects.

System Wide Water Resources

The goal of the System-Wide Water Resources component is to provide the Corps of Engineers and its partners the capabilities to balance human development activities with the natural system in a sustainable manner through regional management and restoration of the Nation's water resources over broad temporal and spatial scales. The capabilities provided herein include science-based water resource management methodologies, implementation guidance, computational frameworks and technologies, and decision support. These capabilities are being built from sound scientific principles reflecting an improved understanding of inter-relationships among key system attributes such as hydrology, geomorphology, chemistry, ecology, and socioeconomic. Capabilities will be served via a seamless, integrated architecture allowing projects to be considered at multiple-scales during project planning, design, construction, operation and maintenance. Current R&D emphasis in this area is on Urban flood damage reduction and stream restoration technologies, regional sediment management, aquatic ecosystem management, assessment and restoration technologies, and regional and corporate frameworks for data collection, management and analysis. Each of these efforts is being pursued through extensive partnering and collaboration with federal and state resource management agencies, with academia and with the private sector.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

PROJECTED CIVIL WORKS R&D FUNDING ALLOCATIONS (FY 04-05))

<u>BY RESEARCH AREA</u>	<u>FY 2004 ALLOCATION</u>	<u>FY 2005 TENTATIVE ALLOCATION</u>
a. Navigation (to include hydropower)	\$ 3,656,000	\$ 6,200,000
b. Flood and Coastal (to include Water Supply, Emergency Management, and Recreation)	\$3,757,000	\$ 4,000,000
c. Environmental (to include Regulatory)	\$ 1,102,000	\$ 1,500,000
d. System Wide Analysis Water Resources	\$6,435,000	\$ 9,100,000
	<u>\$14,950,000</u>	<u>\$20,800,000</u>

<u>BY CW BUSINESS LINE</u>	<u>FY 2004 ALLOCATION</u>	<u>FY 2005 TENTATIVE ALLOCATION</u>
a. Navigation	\$ 5,456,000	\$ 8,000,000
b. Flood/Coastal	\$ 5,800,000	\$ 7,400,000
c. Environmental	\$ 3,694,000	\$ 5,400,000
	<u>-----</u> \$14,950,000	<u>-----</u> \$ 20,800,000

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

a. Navigation

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$ 27,500,000
Allocation Requested for FY 2005	6,200,000
Balance to Complete After FY 2005	21,300,000
Allocation for FY 2004	3,656,000
Change in FY 2005 from FY 2004	2,544,000

JUSTIFICATION:

This research area provides advanced and innovative tools and technology for the Corps to improve navigation and hydropower functional performance, reduce unit costs, and improve safety. The Corps works with these funds to improve its capabilities to assess the economic and effects of alternative plans for projects and select the most balanced and sustainable solutions. R&D focuses on providing efficient and effective capabilities to plan, design, construct, operate, maintain, and upgrade transportation and hydropower projects in inland and coastal locations and in all climates, from warm to ice-affected. Capabilities to provide reliable transportation and hydropower and reduce the life-cycle costs of projects are needed. The capabilities include advanced processes and design models, economic models and decision support software, infrastructure condition assessment techniques, and economic and risk analysis frameworks, infrastructure and design guidance, and innovative monitoring, operation and maintenance technologies.

Economics is a critical portion of decisions on Corps projects. Navigation area economic R&D provides framework and analytical tools that are key to quantifying problems, evaluating alternative competing solutions, and making informed investment decisions. Risk analysis provides a framework for organizing and quantifying underlying uncertainties in, and management of existing facilities. Navigation Economic Technologies (NETS) provides enhanced and standardized evaluation tools and methods for shallow and deep draft navigation project life-cycle analyses. Peer reviewed procedures will be developed to improve traffic forecasts, economic benefits, and uncertainties in major improvement projects.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

a. Navigation (continued)

FY 2005 ACTIVITY:

- Provide design document and beta version of “glass box” spatial equilibrium model of a waterway transportation system; a significant improvement in navigation project economic justification technology.
- Completion of first generation international spatial equilibrium models for petroleum and containers.
- Completion of a first generation model of “glass box” regional traffic routing
- Provide improved long-shore transport algorithms, sediment transport models, and a unique testing facility that will significantly improve design of coastal navigation channels and structures.
- Provide software for life cycle cost analysis for design of new jetties and breakwaters and maintenance of existing structures; significantly reducing cost of new and rehabilitated structures optimizing scheduling of repairs.
- Provide innovative technologies and procedures for the evaluation, repair, and rehabilitation of steel and concrete hydraulic structures.
- Provide seismic rehabilitation procedures and computer tools for water resource infrastructure.
- Provide guidance on barge impact forces on lock walls, greatly assisting design of cost effective lock walls, with potential large cost savings.
- Develop beta version of software for estimating dredging cost with uncertainty, significantly improving quality of dredging cost estimates.

FY 2004 ACCOMPLISHMENTS:

- Developed elasticity of demand of water transport for Midwest grain using revealed choice approach, a critical part of improving the economics of the Upper Mississippi River Navigation Expansion Study.
- Completion of instrument, survey and econometric analysis estimating the willingness to pay for transportation services on inland waterways for grains, coal and other commodities.
- Completion of a hedonic model explaining processing time through locks in terms of the attributes of the lock and the tow..
- Provided CADET model for predicting underkeel clearance of vessels entering coastal harbors, allowing risk-based predictions of deep draft channel design, optimizing dredging costs and increasing safety.
- Provided guidance for lock approaches, significantly improving lock design, increasing throughput and reducing accidents.
- Provided technical guidelines for seismic stability analysis of concrete gravity dams, increasing dam safety.
- Provided update of current design guidelines for reinforced concrete hydraulic structures resulting in safer, more cost effective structures.
- Developed HarborSym software tool and guidance for quantifying overall engineering and economic risk of deep draft navigation investments

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

b. Flood and Coastal Protection

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$30,000,000
Allocation Requested for FY 2005	4,000,000
Balance to Complete after 2005	26,000,000
Allocation for FY 2004	3,757,000
Change in FY 2005 from FY 2004	243,000

JUSTIFICATION:

To carry out its "Flood and Coastal Storm Damage Reduction" mission, the Corps of Engineers is responsible for more than 600 dams, operates over 400 major lakes and reservoirs, maintains 8,500 miles of levees, and has over 100 coastal storm-damage reduction and related projects. Flooding that occurs in the United States costs about \$4 billion annually. Despite all efforts, annual damages in the flood plain continue to rise due to continued urban development. In addition, the 2000 census showed that more than 50% of the US population lives within 50 miles of a coast and is vulnerable to dangerous coastal storms and costly flooding. Consequently, over the past several years, Federal shore protection expenditures increased to more than \$100,000,000 per year.

The Corps manages existing water resources projects around the country to maintain a flood-protection infrastructure for the public's welfare. Simultaneously, the Corps balances requirements for hydropower, water supply, environmental stewardship, and recreation. As enabling technologies are developed, the Corps must upgrade and improve water resource projects; the Corps must have the most advanced capability to assess the risk of alternative operational scenarios; and the Corps is expected to apply robust, reliable, and comprehensive capabilities to assess the economic and environmental effects of alternative plans for projects and to select the most balanced and sustainable solutions. R&D delivers efficient and effective capabilities to plan, design, construct, operate, maintain, and upgrade water resources projects in all climates and settings, from warm to ice-affected, and from inland to coastal. Capabilities to prevent loss of life, minimize property damage, and reduce the life-cycle costs of projects are critical. The capabilities include advanced processes and design models, economic models and decision support software, infrastructure condition and risk assessment tools, infrastructure design guidance, innovative operation and maintenance technologies, flood-alert instrumentation and expedient emergency response capabilities, and the capability to take advantage of new real-time data sources (e.g. precipitation radar) to accurately forecast real-time flow and stages.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

b. Flood and Coastal Protection (continued)

FY 2005 ACTIVITY:

- Advancing the one-dimensional river hydraulics model, HEC-RAS, used across the Corps and around the world by thousands of river engineering practitioners.
- Enhancing Corps' software, to combine the power of the Corps' hydrology & hydraulics modeling suite into a single system.
- Upgrading & releasing new versions of the Corps Water Management System (CWMS) software, to include advanced forecast procedures, water accounting, environmental quality restoration, improved snowmelt techniques, and risk and uncertainty.
- Providing maintenance technologies for flood control projects that are less costly to apply and last longer even with extreme weather conditions.
- Providing integrated analysis techniques for retrofit of concrete dams and appurtenant structures for enhanced stability performance under extreme loads.
- Providing comprehensive, unified risk analysis techniques for prioritization of dam safety needs across all hazards and all projects.
- Develop guidance for engineering of earth embankments on weak foundations, retrofitting alternatives for reservoir intake/outlet structures, and streambank protection and restoration.
- Develop new beach fill monitoring techniques and update the Engineering Manual on beach fill monitoring.
- Develop and test innovative ice control methods to optimize water control operation and mitigate ice jam flood damages in ice-affected rivers.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

b. Flood and Coastal Protection (continued)

FY 2004 ACCOMPLISHMENTS:

- Advanced and enhanced HEC-RAS, and HEC-HMS, to simulate grounded ice-jams, sediment transport and morphology changes, interior drainage capabilities, and automated storm analysis.
- Advanced and enhanced the Corps Water Management System (CWMS), which supports water resources project operation by implementing a continuous forecast capability, upgrading snow hydrology, and improving reservoir system simulations (for hydropower pumpback storage, water accounting, and period of record analyses).
- Improved flood impact analysis capabilities by advancing risk analysis procedures and flood damage computations.
- Developed advanced guidance for siting grade-control structures and initial streambank protection designs to improve flood channel design and stream restoration efforts.
- Developed enhanced capabilities for erosion assessment of unlined rock-surface spillways and channels, estimation tools for piping & seepage through dams, and stability performance evaluation of dams and intake/outlet structures to ensure life-safety under extreme loads.
- Upgraded the Corps flood damage and impact assessment software to include risk and uncertainty in its formulation.
- Tested and evaluated dam safety risk analysis techniques at basin-wide (portfolio) levels in demonstration projects and technical workshops.
- Improved the Corps' Ice Jam Database, used widely in planning and emergency management activities through the addition of rapid web-based mapping capability. Developed risk-based ice control analysis and design guidance. Developed and tested new technologies for ice jam prediction

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

c. Environmental

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$18,000,000
Allocation Requested for FY 2005	1,500,000
Balance to Complete after FY 2005	16,500,000
Allocation for FY 2004	1,102,000
Change in FY 2005 from FY 2004	398,000

JUSTIFICATION:

Since the Water Resources Development Act of 1986, there has been a dramatic increase in authorized ecosystem restoration studies, projects and programs. At the same time, the Corps operates and maintains 25,000 miles of inland and coastal navigation waterways, 562 reservoirs (5,500,000 surface acres), 237 navigation locks, 926 harbors, 75 hydropower projects, 879 flood control projects, and thousands of acres of adjacent lands as part of its water resource mission. Wide-ranging proactive environmental compliance, management, and restoration efforts are an integral part of Corps water resource management. The Corps' mission is to ensure that it proactively considers the environmental consequences of any proposed activities, as well as the operation and maintenance and/or restoration and enhancement of existing projects to help solve these critical environmental problems. The Environmental Technologies research area addresses the Corps' highest priority environmental issues through the development and application of state-of-science, cost-effective, time-saving technologies including: 1) quantitative replacement of lost ecosystem functions, 2) engineering & biological tools for the restoration & management of rivers, streams and riparian zones ; 3) standardized design criteria for wetlands restoration and creation; and 4) habitat management techniques for plant and animal species of concern and threatened and endangered species. The products produced through this R&D provide scientifically defensible / field validated solutions to the Corps' highest priority environmental problems, that reduce unnecessary regulatory burdens, provide environmental benefits, and maintain a very high return on taxpayer investment.

FY 2005 ACTIVITY:

Develop guidelines to evaluate the physical and ecological responses following dam removal projects to mitigate adverse impacts

- Perform field validation of models used to predict aquatic habitat restoration benefits from completed Corps projects.
- * Develop a GIS-based decision support system to prioritize restoration projects/sites
- Develop riparian and in-stream restoration techniques for improved multi-functional Continuing Authorities Projects (CAP)

APPROPRIATION TITLE: General Investigations, FY 2005

- * Establish standards and guidelines to measure success of riparian ecosystem restoration projects

3. Research and Development

c. Environmental (continued)

FY 2004 ACCOMPLISHMENTS:

Provided guidelines for the planning and execution of dam removal projects to protect/enhance our Nation's streams and rivers ecosystems

- Continued work on innovative technologies for restoration of submerged aquatic vegetation
- Developed a multi-functional approach to riparian and in-stream restoration techniques that improves species protection as well as environmental quality
- Provided guidelines for improved natural resource inventory techniques for Corps lands to insure their preservation
- Established guidelines for innovative tree planting techniques in arid/semi-arid riparian regions
- Developed community index models for Coastal and Riparian ecosystems
- Identified benefits of levee gapping on fish communities and sediment accumulation for Coastal wetlands
- Produced regional guide books for depressionnal, riverine, and coastal wetlands

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

d. System-Wide Water Resources.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2005-2009) Program Cost	\$55,000,000
Allocation Requested for FY 2005	9,100,000
Balance to Complete after FY 2005	45,900,000
Allocation for FY 2004	6,435,000
Change in FY 2005 from FY 2004	2,665,000

JUSTIFICATION:

In view of the importance of sustainability in water resources management, the Corps is adopting a watershed or basin-wide approach which adds a system-wide perspective to its project planning, design, operations and maintenance activities. This spatially expanded perspective is necessary, because water resources projects and resultant changes in land/water use have consequences well beyond project footprints. Key to sustainability is the balance among environmental, economic and societal concerns. The System-Wide Water Resources component of the Civil Works R&D Program is designed to provide the Corps with the technical capabilities required to meet its mission responsibilities at project, watershed, and large basin scales, while effectively engaging stakeholders and decision makers with potentially competing interests (e.g., environmental vs. economics).

The overall purpose of the System-Wide Water Resources component is to develop and deliver technology to support decisions that are scientifically, technically, and economically sound in formulating and executing watershed projects. This technology will be delivered primarily through a single System-Wide Product Line. This Product Line will be designed such that data will be entered only once but used many times, and that all data entered or generated will be archived for future uses. The Product Line will be multi-user, serving a wide range of needs and interests from decision makers to technical specialists to stakeholders and partners. Products will be delivered to the user via the Internet internet in a consistent, but personalizable, web-based format, together with tutorials explaining their characteristics and how to use them. Analytical tools in the Product Line will serve a range of needs from screening to the most detailed, and their scientific rigor will increase constantly as part of the continued maintenance and upgrading of the Product Line's capabilities. All tools in the Product Line will be interconnected with standard linkages, and software development and maintenance costs will be minimized through the use of Commercial-Off-the-Shelf (COTS) products where practicable. Over the 2005 – 2009 budget period, the Product Line will focus on delivering the following capabilities in sequence: single entry data management, unified assessment and computational environment, alternative/tradeoff/risk analysis and evaluation, cumulative impact analysis, all linked through a regional multi-agency problem solving portal.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

d. System-Wide Water Resources (continued)

Wide-ranging proactive environmental compliance, management, and restoration efforts are an integral part of the Corps responsibilities in water resources management. Moreover, recent U.S. figures have estimated \$16 billion per year in damages caused by point- and non-point-source pollution and up to 1 billion tons per year of eroded soils and industrial and agricultural contaminants that are deposited in the Nation's waterways. These impacts are severely affecting multiple project uses, impeding navigation, restoration, and negatively affecting human and ecological health. An integral part of the Corps' mission is to ensure that project planning, construction, operation, and maintenance activities solve critical environmental problems, while ensuring economic viability and societal acceptance. The System-Wide Water Resources component will provide, at a regional scale, scientifically proven and demonstrated solutions to the Corps' highest priority environmental problems, reduce unnecessary regulatory burdens, and provide environmental benefits, while maintaining a very high return on taxpayer investment. The broadened focus of this research, which addresses systemic water resource management issues, will enable the Corps to more effectively meet the legal requirements such as the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).

Maintaining navigable waterways and flood channels in the face of continuing sediment deposition consumes a substantial portion of the Corps' budget. More effective sediment management on a regional scale can reduce dredging costs and potentially adverse environmental impacts by diverting sediment from channels and into deposition zones. Sediment and associated nutrients/contaminants also have important effects on the environment. Thus, a better understanding of sediment processes in an environmental context is critical in relation to habitat and water quality concerns regionally. As well, attention to sediment processes in the Corps O&M program will improve cost effectiveness in planning and designing navigation projects, estimating channel shoaling, locating optimum dredged-material placement, and assessing the impact of navigation projects and structures on adjacent waters, shorelines, and downstream areas.

Decision makers both within the Corps and among stakeholder organizations require accurate and reliable data for the effective planning, design, construction, operation, maintenance, and rehabilitation of projects. Annual expenditures for collection, analysis, and management of geospatial data alone are estimated to average almost \$200M. This component will provide significant savings, owing to the development of more effective and efficient data collection, management, and exploitation technologies. To further reduce costs, a new framework approach to integrating and managing data and software for model/applications in a consistent, corporate manner is being developed. As an integral part of framework development, work in the areas of information security, informatics, metadata, interoperability, enterprise GIS, data visualization, and knowledge management will be ongoing.

As new and innovative technologies and methodologies are developed in this component, it will be critical to transfer information concerning these innovations to the Corps, other Federal, state, and local agencies, and to the public as quickly and efficiently as possible so that they can be effectively applied. It will be equally important to validate the applicability of the innovative technologies through demonstrations, which are a key element of this component. Examples include innovative use of remote sensing for environmental monitoring and satellite linked GIS/GPS laptops to assist with onsite environmental analyses that can be connected quickly on a system scale.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

d. System-Wide Water Resources (continued)

FY 2005 ACTIVITY

- Initiate linkages among riverine, estuarine and coastal hydrodynamic models to broaden the spatial scope of attention to material transport.
- Provide novel methods and guidance for reducing urban flood damage in both inland and coastal environments.
- Enhance database access and update methods and tools for system-wide assessment and prediction of ecological responses to environmental gradients.
- Develop ecological response algorithms that are sensitive to physical, chemical, and biological phenomena over multiple spatial and temporal scales.
- Develop nutrient transport and fate algorithms for system-wide (terrestrial, riverine/reservoir, and estuarine) assessment and prediction.
- Develop Gridded Surface/Subsurface Hydrologic Analysis (GSSHA) code connecting to sediment and nutrient transport codes for overland and channel flow to provide input to multi-dimensional water quality models for lakes, rivers, and estuaries.
- Develop common data format and procedures for linking selected hydrodynamic codes to selected index, geospatial, and water quality models.
- Integrate statistical methods with GIS to perform regional analysis for watersheds necessary for water resources-related risk estimation.
- Develop a standard approach to the development of graphical user interfaces to support user-friendly interaction with multi-dimensional models.
- Develop innovative and emerging measurement and monitoring technologies to support navigation, flood/storm damage reduction, and environmental restoration missions of the Corps.

FY 2004 ACCOMPLISHMENTS:

- Completed a detailed review of regional sediment management strategies developed for large system-scale projects within the Corps.
- Developed novel technologies for sediment measurement and monitoring for use at both local and regional scales.
- Completed basic regional sediment processes research to improve modeling capabilities, engineering guidance, and understanding of sediment transport in natural systems.

APPROPRIATION TITLE: General Investigations, FY 2005

3. Research and Development

d. System-Wide Water Resources (continued)

- Developed preliminary algorithms for biological response to sediment transport in river, reservoir, and estuarine environments.
- Conducted demonstrations of prototype coupled hydrodynamic, water quality, and ecological response models for watershed, riverine, reservoir, and estuarine systems.
- Developed a corporate environmental software package to analyze geospatial and statistical data critical for modeling, managing, sustaining and restoring watersheds.
- Developed web service to more effectively deliver data for programmatic consumption by Science & Engineering (S&E) models and/or decision support tools.
- Analyzed remote sensing methods to improve snow and ground water mapping techniques in all-weather, day-night conditions and new tools to incorporate the methods in Corps water resource projects.
- Compiled and reviewed assessment and predictive tools (numerical models) for system-wide applications.
- Established a common file format and created a first generation conceptual sediment model to assist managers in selecting optimal or near-optimal sediment management decision scenarios.

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

**SUMMARY OF REMAINING ITEMS
 CONSTRUCTION, GENERAL**

	<u>FY 2004 Appropriation</u>	<u>FY 2005 Request</u>	<u>Increase (Decrease)</u>
2. Navigation Projects			
a. Channels and Harbors			
(II) Projects Not Specifically Authorized By Congress (Sec. 107, P.L. 86-645)	9,000,000	3,000,000	(6,000,000)
(III) Mitigation of Shore Damages Attributable to Navigation Projects (Sec. 111, P.L. 90-483)	1,500,000	500,000	(1,000,000)
(IV) Dredged Material Disposal Facilities Program (sec. 101, P.L. 99-662)	7,000,000	8,834,000	1,834,000
c. Inland Waterways Users Board (Sec. 302, P.L. 99-662)			
(I) Board Expenses	45,000	45,000	0
(II) Corps Expenses	185,000	185,000	0
4. Shore Protection Projects			
a. Shoreline Erosion Control Development and Demonstration Program (Sec. 227, P.L. 104-303)	6,000,000	5,000,000	(1,000,000)
b. Projects Not Specifically Authorized by Congress (Sec. 103, P.L. 87-874)	3,500,000	2,500,000	(1,000,000)
5. Flood Control Projects			
a. Local Protection			
(II) Projects Not Specifically Authorized by Congress (Sec. 205, P.L. 80-858)	30,000,000	14,000,000	(16,000,000)
(III) Emergency Streambank and Shoreline Protection (Sec. 14, P.L. 79-526)	9,000,000	7,000,000	(2,000,000)
(IV) Snagging and Clearing (Sec. 208, P.L. 83-780)	500,000	400,000	(100,000)
6. Dam Safety and Seepage/Stability Correction Program	14,000,000	9,000,000	(5,000,000)

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

SUMMARY OF REMAINING ITEMS
CONSTRUCTION, GENERAL

	<u>FY 2004</u> <u>Appropriation</u>	<u>FY 2005</u> <u>Request</u>	<u>Increase</u> <u>(Decrease)</u>
10. Improvement of the Environment			
a. Project Modifications for Improvement of the Environment (Sec. 1135, P.L. 99-662)	17,000,000	13,500,000	(3,500,000)
b. Aquatic Ecosystem Restoration (Section 206, P.L. 104-303)	18,050,000	10,000,000	(8,050,000)
c. Estuary Restoration Program (P.L. 106-457)	1,500,000	0	(1,500,000)
d. Abandoned/Inactive Noncoal Restoration	1,000,000	0	(1,000,000)
12. Aquatic Plant Control Program	4,000,000	2,500,000	(1,500,000)
13. Beneficial Uses of Dredged Material (Sec. 204, P.L. 102-580, Sec.207, P.L. 102-580, Sec. 933, P.L. 99-662)	6,000,000	2,000,000	(4,000,000)
14. Employees Compensation (Payments to Department of Labor)	19,130,000	20,000,000	870,000
	=====	=====	=====
Total	147,410,000	98,464,000	(48,946,000)

APPROPRIATION TITLE: Construction, General, FY 2005

2. Navigation Projects

a. Channels and Harbors

(II) Projects not Specifically Authorized by Congress (Section 107, PL 86-645, as amended)

Allocation FY 2004	\$9,000,000	Tentative Allocation FY 2005	\$3,000,000
--------------------	-------------	------------------------------	-------------

GENERAL: Section 107 of the River and Harbor Act of 1960 (PL 86-645), as amended, authorizes up to \$35,000,000 annually for construction of navigation projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete navigation project that would be provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation cannot exceed \$4,000,000 per project.

BUDGET REQUEST: The \$3,000,000 requested for Fiscal Year 2005 is to continue the Section 107 program of development and construction of navigation projects at locations throughout the Nation. No funds are included for new construction starts.

(III) Mitigation of Shore Damages Attributable to Navigation Projects (Section 111, PL 90-483, as amended)

Allocation FY 2004	\$1,500,000	Tentative Allocation FY 2005	\$500,000
--------------------	-------------	------------------------------	-----------

GENERAL: Section 111 of the River and Harbor Act of 1968 (PL 90-483), as amended, authorizes the construction of projects for the prevention or mitigation of shore damages attributable to Federal navigation works. The cost of installation is cost shared in the same manner as the costs for the project causing the shore damage were shared. The cost of operation and maintenance is borne by the non-Federal sponsor. Projects first cost shall not exceed \$5,000,000 without specific authorization by Congress.

BUDGET REQUEST: The \$500,000 requested for Fiscal Year 2005 is to continue the Section 111 program of mitigation of shore damages attributable to Federal navigation works. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

2. Navigation Projects

a. Channels and Harbors

(IV) Dredged Material Disposal Facilities Program

Allocation FY 2004	\$7,000,000	Tentative Allocation FY 2005	\$8,834,000
--------------------	-------------	------------------------------	-------------

GENERAL: Section 101 of the Water Resources Development Act of 1986 (WRDA 86)(Public Law 99-662) as amended by Section 201 of the Water Resources Development Act of 1996 (WRDA 96)(Public Law 104-303) established consistent cost-sharing for construction of dredged material disposal facilities associated with Federal navigation projects, including disposal facilities for Federal project maintenance. The costs of constructing land-based and aquatic dredged material disposal facilities associated with the construction, operation, and maintenance of all Federal navigation harbors and inland harbors shall be considered costs of constructing a general navigation feature of the project and shall be shared in accordance with the procedures set forth in section 101(a) of WRDA 86.

BUDGET REQUEST: The \$8,834,000 requested for Fiscal Year 2005 will be used for the Federal share of construction of applicable dredged material disposal facilities required for maintenance of existing projects, reimbursement of non-Federal sponsors for dredged material disposal facilities constructed by them in advance of Federal appropriations for such purpose, or fee payments to private entities for the use of privately owned dredged material disposal facilities if such a facility is the least cost alternative to dispose of dredged material. All costs for dredged material disposal facilities associated with project construction and maintenance will be reimbursed from the Harbor Maintenance Trust Fund.

APPROPRIATION TITLE: Construction, General, FY 2005

2. Navigation Projects

c. Inland Waterways Users Board

Allocation FY 2004	\$230,000	Tentative Allocation FY 2005	\$230,000
--------------------	-----------	------------------------------	-----------

The \$230,000 requested for Fiscal Year 2005 is to support, operations and expenses of the Inland Waterways Users Board, established by Section 302 of the Water Resources Development Act of 1986, (PL 99-662) and pursuant to the Board's charter, approved by the Secretary of the Army on March 3, 1987. The Board is an advisory committee subject to the requirements of the Federal Advisory Committee Act (PL 92-463).

(1) Funds in the amount of \$45,000 are requested to meet the estimated expenses of the eleven member Board for its travel, meeting, and other needs to meet the requirements of the Charter.

(2) Funds in the amount of \$185,000 are requested for Corps of Engineers expenses related to its responsibilities as an advisory committee sponsor. The Director of Civil Works has been designated Executive Director to the Board, and he has designated staff members to provide continuing Board support. Corps expenses will include personnel costs for administrative Board meeting support, including staff travel, clerical, printing, and related materials.

APPROPRIATION TITLE: Construction, General, FY 2005

4. Shore Protection Projects

a. Shoreline Erosion Control Development and Demonstration Program (Section 227, PL 104-303)

Allocation FY 2004	\$6,000,000	Tentative Allocation FY 2005	\$5,000,000
--------------------	-------------	------------------------------	-------------

GENERAL. Section 227 of WRDA 96 authorized \$21,000,000 for the Corps to conduct a Shoreline Erosion Control Development and Demonstration Program in coordination with state and local governments, academia, the private sector, and the Department of Agriculture, for the purpose of developing innovative techniques and technologies for controlling shoreline erosion, and demonstrate those innovations, and others that may exist within the private sector. To date, \$6,550,000 of General Investigations funds have been used to develop specific program goals, establish criteria for selecting technologies and techniques to be tested, select sites for testing, and initiate construction of the first demonstration site at Cape May Point, New Jersey. Other demonstration projects are planned for sites in Texas, Michigan, Florida, California, Ohio, New York, and South Carolina. The techniques developed under this program are expected to yield up to \$150,000,000 of savings in future budgets by reducing erosion and/or lengthening the time between renourishments for our existing shore protection/beach projects. The program is scheduled to complete in September 2005.

BUDGET REQUEST: The \$5,000,000 requested for Fiscal Year 2005 will be used to plan, design, construct and monitor projects to demonstrate and evaluate these new shoreline protection technologies.

b. Projects Not Specifically Authorized by Congress (Section 103, PL 87-874, as amended)

Allocation FY 2004	\$3,500,000	Tentative Allocation FY 2005	\$2,500,000
--------------------	-------------	------------------------------	-------------

GENERAL: Section 103 of the River and Harbor Act of 1962 (PL 87-874), as amended, authorizes up to \$30,000,000 annually for construction of shore restoration and protection projects where not already specifically authorized by Congress. Projects under this special authority are formulated to provide the same complete project and same degree of protection provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation is limited to \$3,000,000 per project.

BUDGET REQUEST: The \$2,500,000 requested for Fiscal Year 2005 is to continue the Section 103 program of development and construction of hurricane and storm damage protection measures along the Nation's shorelines. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

5. Flood Control Projects

a. Local Protection

(II) Projects Not Specifically Authorized by Congress (Section 205, PL 80-858, as amended)

Allocation FY 2004	\$30,000,000	Tentative Allocation FY 2005	\$14,000,000
--------------------	--------------	------------------------------	--------------

GENERAL: Section 205 of the Flood Control Act of 1948 (PL 80-858), as amended, authorizes up to \$40,000,000 annually for construction of flood control projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete project and same degree of protection provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation is limited to \$7,000,000 per project.

BUDGET REQUEST: The \$14,000,000 requested for Fiscal Year 2005 is to continue the Section 205 program of development and construction of flood damage prevention projects at locations throughout the Nation. No funds are included for new construction starts.

(III) Emergency Streambank and Shoreline Protection (Section 14, PL 79-526, as amended)

Allocation FY 2004	\$9,000,000	Tentative Allocation FY 2005	\$7,000,000
--------------------	-------------	------------------------------	-------------

GENERAL: Section 14 of the Flood Control Act of 1946 (PL 79-526), as amended, authorizes up to \$15,000,000 annually for the construction of emergency bank protection works to prevent flood damages to highways, bridge approaches, public works, churches, hospitals, schools, and other non-profit public services. Each project selected must be economically justified and complete within itself. Federal participation under this authority is limited to a cost of not more than \$1,000,000 at any single locality.

BUDGET REQUEST: The \$7,000,000 requested for Fiscal Year 2005 is to continue the Section 14 program of emergency bank protection construction to prevent flood damages to highways, bridge approaches, and essential public facilities at locations throughout the Nation. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

5. Flood Control Projects

a. Local Protection

(IV) Snagging and Clearing (Section 208, PL 83-780, as amended)

Allocation FY 2004	\$1,000,000	Tentative Allocation FY 2005	\$400,000
--------------------	-------------	------------------------------	-----------

GENERAL: Section 208 of the Flood Control Act of 1954 (PL 83-780), as amended, authorizes up to \$7,500,000 annually for removing accumulated snags and other debris, and clearing and straightening of the channels in navigable streams and tributaries thereof, when in the opinion of the Chief of Engineers such work is advisable in the interest of flood control. Federal cost participation under this authority is limited to a cost of not more than \$500,000 for any single tributary. Each project selected must be economically justified and complete-within-itself.

BUDGET REQUEST: The \$400,000 requested for Fiscal Year 2005 is to continue the Section 208 program of channel clearing in the interest of flood control at locations throughout the Nation. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

6. Dam Safety and Seepage/Stability Correction Program

Allocation FY 2004

\$14,000,000

Tentative Allocation FY 2005

\$9,000,000

GENERAL: The Dam Safety and Seepage/Stability Correction Program provides for modification of completed Corps of Engineers dam projects. There are over 700 dam projects under Corps jurisdiction. While no Corps dams are in imminent danger of failure, some may have a higher dam-safety risk than originally anticipated based on new data or the likelihood of extremely large floods and seismic events. Seepage problems at USACE dams are usually related to increased reservoir levels above the previous pool of record at a project. Static instability generally involves movement that starts at a slow rate and could result in massive displacement of large volumes of material if not corrected. Seepage/stability correction projects are classified as major rehabilitations. Dam modification work is proceeding under existing authorities on projects where cost-effective risk reduction measures have been identified and approved.

BUDGET REQUEST: The \$9,000,000 requested for Fiscal Year 2005 will be used to initiate Dam Safety and Seepage/Stability projects which may be approved during FY 2005 as a result of studies now underway.

APPROPRIATION TITLE: Construction, General, FY 2005

10. Improvement of the Environment

a. Project Modifications for Improvement of the Environment (Section 1135, PL 99-662, as amended)

Allocation FY 2004	\$17,000,000	Tentative Allocation FY 2005	\$13,500,000
--------------------	--------------	------------------------------	--------------

GENERAL: Section 1135 of the Water Resources Development Act of 1986 (PL 99-662), as amended authorizes review of Corps water resources projects to determine the need for structural or operational modifications for the purpose of improving the quality or the environment in the public interest; to determine if the operation of such projects has contributed to the degradation of the quality of the environment; and to carry out a program of such modifications that are feasible and consistent with authorized project purposes. Up to \$25,000,000 may be appropriated annually. The non-Federal share of the cost of any modifications will be 25 percent. Modifications with estimated Federal costs over \$5,000,000 require specific Congressional authorization.

BUDGET REQUEST: The \$13,500,000 requested for Fiscal Year 2005 is to continue the Section 1135 program of project modifications in the interest of improving the quality of the environment. No funds are included for new construction starts.

b. Aquatic Ecosystem Restoration (Section 206, P.L. 104-303)

Allocation FY 2004	\$18,050,000	Tentative Allocation FY 2005	\$10,000,000
--------------------	--------------	------------------------------	--------------

GENERAL: Section 206 of the Water Resources Development Act of 1996 authorizes up to \$25,000,000 annually to carry out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest and are cost-effective. Non-Federal interests shall provide 35 percent of the cost of construction including provision of all lands, easements, rights-of-way, and necessary relocations. Non-Federal interests shall pay 100 percent of the cost of operation, maintenance, replacement and rehabilitation. Not more than \$5,000,000 in Federal funds may be allocated to a project at a single locality.

BUDGET REQUEST: The \$10,000,000 requested for Fiscal Year 2005 is to continue the Section 206 program of aquatic habitat restoration. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

12. Aquatic Plant Control (APC) Program

Allocation FY 2004	\$4,000,000	Tentative Allocation FY 2005	\$2,500,000
--------------------	-------------	------------------------------	-------------

GENERAL: Aquatic plant control research is the nation's only Federally authorized research program for technology which is necessary to manage non-indigenous aquatic plant species. The objective of the research is to develop cost effective, environmentally compatible aquatic plant control technology, including biological, chemical, and integrated control methods. Research involving management strategies and applications and ecological factors are also being conducted. The control technology, management strategies and ecological understanding resulting from APC research forms the national base in the APC area, and is applied not only to control aquatic plant infestations in public waters nationwide, but is also essential to cost effective, environmentally compatible, aquatic plant control for the operation and maintenance of Corps projects. Nearly 3.0 million acres nationwide are now infested with problem aquatic plants. The Corps manages over 5.6 million surface acres of water at its reservoir projects alone, with significant additional acreage as part of navigation projects. Eurasian watermilfoil, hydrilla, alligatorweed, and other exotic species continue to expand from local infestations, many of which are interfering with navigation, flood control, hydropower production water quality and aquatic habitat. New colonies of objectionable aquatic plants continue to be found, such as hydrilla in the southeast and Eurasian watermilfoil in the Midwest. The direct application of technologies developed by research under the Aquatic Plant Control Program have resulted in the reduction of waterhyacinth in the Gulf Coast States and California of over 3 million acres. In Louisiana alone, water hyacinth has been reduced from 1.5 million acres to about 200,000 acres. In addition, technology developed by the APC research program has resulted in a nationwide reduction of alligatorweed. Estimated annual savings produced by application of these APC research technologies are between \$15,000,000 and \$20,000,000 over the costs of conventional methods. The Aquatic Plant Control Program is authorized by Section 104 of the River and Harbor Act of 1958, (P.L. 85-500), as amended by Section 104 of the River and Harbor Act of 1962, (P.L. 87-874), Section 302 of the River and Harbor Act of 1965 (P.L. 89-298), and Sections 103, 105, and 941 of the Water Resources Development Act of 1986 (P.L. 99-662), Section 225 of the Water Resource Development Act of 1996 and Section 205 of the Water Resource Development Act of 1999 (P.L. 106-53). The APC program has an annual expenditure ceiling of \$15,000,000.

BUDGET REQUEST: The \$2,500,000 requested for Fiscal Year 2005 will be used for continued research efforts for aquatic plant control technologies to support the operation and maintenance of Corps projects. Efforts will focus on control methods for submersed aquatic plants (i.e. Eurasian watermilfoil, and hydrilla), with emphasis on biological control agents, chemicals, integrated control methods, management strategies and ecological factors that impact non-indigenous aquatic plant species. Research efforts are fully coordinated with other Federal, state, and local agencies to prevent duplication of effort and to ensure that research under this program is consistent with, and complementary to, the research efforts of others. The cost of research dealing with problems/outputs of regional or nationwide importance is 100 percent Federal.

APPROPRIATION TITLE: Construction, General, FY 2005

13. Beneficial Uses of Dredged Material (Sec. 204, P.L. 102-580, as amended; Sec 145, P.L. 94-587, as amended)

Allocation FY 2004	\$6,000,000	Tentative Allocation FY 2005	\$2,000,000
--------------------	-------------	------------------------------	-------------

GENERAL: The Beneficial Uses of Dredged Material program involves the use of material dredged from construction and operation and maintenance of navigation projects.

Section 204 of the Water Resources Development Act of 1992 (Public Law 102-580) authorizes the Secretary of the Army to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance by the Secretary of an authorized navigation project, provided that the environmental, economic, and social benefits outweigh the costs thereof. Annual appropriations not to exceed \$15,000,000 are authorized. Section 207 of Public Law 104-303 modified section 204 by authorizing disposal in any manner for which the environmental benefits outweigh the added costs. Costs allocable to the habitat protection, restoration, or creation project are limited to the costs that are in excess of the costs necessary to carry out the dredging for the authorized navigation project. Non-Federal interests are required to share in a minimum of 25 percent of the first costs of each habitat protection, restoration, or creation project, including the provision of all required lands, easements, rights-of-way and relocations with the value of these contributions included in the 25 percent non-Federal share of the project, and to pay 100 percent of the operation, maintenance, and replacement and rehabilitation cost of the wetland or other aquatic habitat area. Policy for such habitat protection, restoration, and creation projects limits Federal participation to those projects that are cost-effective.

Section 145 of the Water Resources Development Act of 1976 (Public Law 94-587), as amended by section 933 of Public Law 99-662, section 35 of Public Law 100-676, Section 207 of Public Law 102-580, Section 217 of Public Law 106-53, and Section 111 of Public Law 106-541, authorizes the Secretary of the Army, upon the request of the affected state, to place dredged material from Federal navigation projects on adjacent beaches if the state or a political subdivision of the state agrees to pay 35 percent of the incremental costs of such placement over the alternative least-cost, environmentally acceptable method of disposal. Policy for beach nourishment with dredged material limits Federal participation in such projects to one-time nourishment at each site.

BUDGET REQUEST: The \$2,000,000 requested for Fiscal Year 2005 is to continue a cost shared program for the protection, restoration and creation of aquatic and ecologically related habitats, including wetlands, and to perform initial beach nourishment with dredged material. No funds are included for new construction starts.

APPROPRIATION TITLE: Construction, General, FY 2005

14. Employees Compensation (Payments to the Department of Labor)

Allocation FY 2004	\$19,130,000	Tentative Allocation FY 2005	\$20,000,000
--------------------	--------------	------------------------------	--------------

GENERAL: Public Law 94-273, approved April 21, 1976, 5 USC 8147b, provides that each agency shall include in its annual budget estimates a request for an appropriation equal to costs previously paid from the Employees Compensation Fund on account of injury or death of employees or persons under the agency's jurisdiction.

BUDGET REQUEST: The \$20,000,000 requested for Fiscal Year 2005 represents the total costs of benefits and other payments made from the Employees Compensation Fund during the period July 1, 1999, through June 30, 2000, due to injury or death of persons under the jurisdiction of the Corps of Engineers civil functions and also includes \$1,200,000 for the investigation of fraudulent claims for workers' compensation benefits.

Department of the Army, Corps of Engineers – CIVIL

OPERATION AND MAINTENANCE, GENERAL

Project Name	FY 2004 Appropriation	FY 2005 Program	04-05 Increase (Decrease)
Aquatic Nuisance Control Research	1,025,000	653,000	(372,000)
Program Development Technical Support (Automated Budget System (ABS-P2)	285,000	250,000	(35,000)
Coastal Inlet Research Program	3,050,000	2,475,000	(575,000)
Cultural Resources (NAGPRA/Curation)	1,545,000	1,391,000	(154,000)
Dredge Wheeler Ready Reserve	8,000,000	8,000,000	0
Dredging Data And Lock Performance Monitor System	1,180,000	1,062,000	(118,000)
Dredging Operations And Environmental Research (DOER)	6,755,000	6,080,000	(675,000)
Dredging Operations Technical Support Program	1,545,000	1,391,000	(154,000)
Earthquake Hazards Reduction Program	300,000	270,000	(30,000)
Extraordinary Maintenance	15,000,000	0	(15,000,000)
Reserve For Key Emergency Maintenance/Repairs	0	35,000,000	35,000,000
Facility Protection	13,000,000	12,000,000	(1,000,000)
Great Lakes Sediment Transport Models	1,000,000	900,000	(100,000)
Harbor Maintenance Fee Data Collection	675,000	608,000	(67,000)
Inland Waterway Navigation Charts	4,120,000	3,708,000	(412,000)
Monitoring Of Completed Navigation Projects	1,750,000	1,575,000	(175,000)
National Dam Safety Program	45,000	250,000	205,000
National Dam Security Program	30,000	31,000	1,000
National Emergency Preparedness Program (NEPP)	6,000,000	5,000,000	(1,000,000)
National Lewis And Clark Commemoration Coordinator	310,000	319,000	9,000
Performance Based Budgeting Support Program	815,000	734,000	(81,000)
Protect, Clear And Straighten Channels (Sec. 3)	50,000	45,000	(5,000)
Recreation Management Support Program (RMSP)	1,545,000	1,600,000	55,000
Regional Sediment Mngt Demonstration Program	1,795,000	1,391,000	(404,000)
Reliability Models Program For Major Rehab.	675,000	608,000	(67,000)
Removal Of Sunken Vessels	500,000	450,000	(50,000)
Water Operations Technical Support (WOTS)	725,000	653,000	(72,000)
Long-Term Options for Small Ports and Harbors	0	0	0
Waterborne Commerce Statistics	4,745,000	4,271,000	(474,000)
Total Remaining Items	76,465,000	90,715,000	14,250,000

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Aquatic Nuisance Control Research

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$653,000
Allocation for FY 2004	1,025,000
Allocation Requested for FY 2005	653,000
Decrease of FY 2005 from FY 2004	372,000

AUTHORIZATION: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (PL 101-646).

JUSTIFICATION: The Aquatic Nuisance Species Research Program (ANSRP) is an expansion of the Zebra Mussel Research Program (ZMRP). This expanded program will address all invasive species except aquatic plants. Invasive species cost the public over \$137 billion annually. The Corps is responsible for the construction, operation, and maintenance of navigable waters and the resources associated with them. Zebra mussels alone cost the public over \$1B annually. The zebra mussel (*Dreissena polymorpha*), first reported in the United States in 1988, was accidentally introduced from Northern Europe via ballast water from ocean-going vessels. It is estimated that over 100 nuisance species are introduced into U.S. waters annually which can impact facility operations and threaten valued natural resources. Methods of prevention and more effective, inexpensive methods of control of invasive species must be developed to prevent impacts to public facilities and protect valuable natural resources.

The ZMRP was the only Federally funded R&D program directed at control of zebra mussels and their effects on public facilities. The program was authorized by the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (PL 101-646). Research efforts have been expanded under the ANSRP to address all invasive aquatic species that impact the nations' waterways infrastructure and associated resources. Methods for prevention, control, and restoration of natural resources will be developed. Prevention methodology focusing on dispersal barrier technology will be investigated. The development of strategies to apply control methods involves engineering design, operations, and maintenance of facilities and structures. Control strategies are being developed for (a) navigation structures; (b) hydropower and other utilities; (c) vessels and dredges; and (d) water treatment, irrigation, and other water control structures. Methods to reduce invasive species impacts to threatened and endangered species and restore natural habitat will be investigated. Due to the introduction of the Northern Snakehead Fish and West Nile Virus the Corps has experienced a significant increase in the number of field assistance requests at our operating projects. Numerous dredged material disposal areas in the Atlantic, Gulf coast and Great Lakes region have mosquito abatement programs. Due to the introduction of the West Nile Virus local communities want greater assurances that mosquito populations at our disposal sites are controlled to the maximum extent practicable. Following introduction of the Northern Snakehead Fish a number of Corps reservoir projects have had to take interdiction measures to prevent their introduction.

PROPOSED ACTIVITIES FOR FY 2005:

1. Expand biological/ecological reference document for invasive species in marine and estuarine environments to include North Atlantic, South Atlantic, Gulf of Mexico, Pacific NW and Alaska, and Pacific Southeast and Pacific Ocean.
2. Provide guidance to evaluate comparative susceptibility of different habitats, ecosystem components, and man-made facilities to aquatic nuisance species infestation with recommended control methods.
3. Provide hybrid internet/computer-based information system that will allow users easy access to detailed/summary information on numerous ANS species.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

4. Develop decision-making ANS assessment technologies to determine threat, early detection, monitoring strategies, management protocols, and exclusion protocols.
5. Evaluate the effectiveness of natural and constructed (hydraulic, acoustic, electrical and bubble) barriers on fish containment.
6. Provide guidance needed to develop long-term management and control strategies for silver and bighead carp in big river field studies.

ACCOMPLISHMENTS IN PRIOR YEARS:

1. Provided guidance related to the economic consequences of introducing Aquatic Nuisance Species into uninfested areas.
2. Developed comprehensive list of Aquatic Nuisance Species most commonly affecting Corps Projects.
3. Developed Web based species profiles for major aquatic nuisance species.
4. Developed technologies to correlate phylogeographic Zebra Mussel distributions to physical and biological characteristics of water systems to identify range-limiting factors.
5. Provide resource for biology, ecology, and pathways of entry of aquatic nuisance species in marine and estuarine environments.
6. Determined impacts of Zebra Mussels to fish communities.
7. Initiate Field Demonstrations of Aquatic Nuisance Species Information Species (ANSIS).

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Program Development Technical Support (ABS – P2)

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$250,000
Allocation for FY 2004	285,000
Allocation Requested for FY 2005	250,000
Decrease of FY 2005 from FY 2004	35,000

AUTHORIZATION: The Automated Budget System supports gathering, analyzing and submitting project-funding requests to respond to all authorized missions within the Corps Operations and Maintenance program. A new automated system; P2 will be used to perform these tasks in FY05.

JUSTIFICATION: The appropriated funds will secure the successful transition to P2 from ABS; this first phase will be completed during FY 2004. The P2 database will contain all O&M projects and the activities that are needed to complete the O&M program during a fiscal year. The priority for these activities will be set using ABS during FY 2004 for the BY 2006 program. The ranking procedures and other ABS analytical tools will be migrated to P2 during FY 2005. The technical support for O&M program development will continue to be provided using P2 rather than ABS tools. The deployment of P2 will shift the efforts towards development of methods and procedures for setting priorities for O&M work and analysis of the O&M program within the context of the entire Civil Works program.

PROPOSED ACTIVITIES FOR FY 2005: Complete the transition from ABS to P2 with the migration of ranking and analytical tools. Support the O&M program and project managers via training and technical support during the developmental of the operation and maintenance program. Develop new program analysis tools as needed.

ACCOMPLISHMENTS IN PRIOR YEARS: Maintained and updated the software systems, provided new tools to generate reports, provided training and support to managers.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Coastal Inlets Research Program

SUMMARIZED FINANCIAL DATA:

Estimated Sixteen-Year (FY 1994-2009) Program Cost	\$32,000,000
Allocation for FY 2004	3,050,000
Allocation Requested for FY 2005	2,475,000
Decrease of FY 2005 from FY 2004	575,000

AUTHORIZATION: These efforts is necessary to provide data for efficient management of Federal navigation projects

JUSTIFICATION: Records demonstrate that the Corps will expend an estimated \$8 to \$10 billion over the next 25 years at the more than 150 tidal inlets with existing Federal navigation projects to maintain, modify, and create navigation channels and structures, and to mitigate damages to adjacent beaches. In addition, the national "2020" plan for deeper and wider channels to accommodate the next class of vessels brings great uncertainty in prediction of maintenance requirements. Political, engineering, and demographic factors may increase costs. The public perception, right or wrong, that Federal activities at inlets cause adverse response at adjacent beaches may require additional, expensive mitigation. Public sensitivity to current maintenance practices, where dredged material is placed in offshore disposal areas, may result in requirements for more nearshore placements of maintenance materials to benefit adjacent beaches. Inlets are the primary conduits for the transport of environmental constituents between bays and the open ocean, and the Corps may be constrained from performing present activities unless it can make accurate predictions of inlet response, and thus environmental response, to such activities.

The Coastal Inlets Research Program is a fixed-length program to increase Corps capabilities to cost-effectively design and maintain the more than 150 inlet projects that comprise the bulk of coastal operations and maintenance (O&M) expenditures. Because of their complex nature, the behavior of inlets is poorly understood. This has resulted in the Corps spending more of its O&M budget than necessary to maintain inlet projects. The Coastal Inlets Research Program will study functional aspects of inlets such as their short- and long-term behavior and their response to waves, tides, currents, and man-made changes, given their geologic makeup. As inlet behavior becomes better understood, sophisticated tools for management of inlets for navigation projects, such as models and empirical relationships, will become available. These new tools will lead to more efficient, cost effective designs that will reduce O&M requirements and, consequently, costs.

PROPOSED ACTIVITIES FOR FY 2005:

1. In collaboration with several Corps Districts, validate the Inlet Modeling System at several deep-draft navigation channels to predict storm-induced and long-term for sediment transport under waves and currents, including geomorphic constraints such as equilibrium volumes, equilibrium natural and dredged channel slopes, and critical shear stresses to bound the non-linear calculations. The IMS is based on the Morphodynamic Steering Module of coupled hydrodynamic models developed previously in the Coastal Inlets Research Program, augmented with sediment transport.
2. Validate the barrier island breaching model developed in FY04 by comparison to data of breaching near Corps jetties such as at Grays Harbor, WA (1992) and Moriches Inlet, NY (1980). Port the breaching model to the IMS.
3. Collect data and validate the Inlet Scour Model developed in FY04, extending theoretical work involving laboratory and limited field data.
4. Conduct major technical transfer workshops on the Atlantic, Pacific, Gulf, and Great Lakes coasts.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

5. Perform physical and numerical modeling studies on innovative jetty and channel-control designs (jetty weirs, impoundment basins, jetty spurs, bendway weirs, etc.) to reduce dredging costs, improve bypassing, and improve navigation reliability at inlet entrance channels. Validate with field data collected at sites of concern to Corps Districts.
6. Populate web-based Inlet Navigation Channel Resource Center to house data on inlet channel surveys, performance, and dredging. This database is being implemented to serve as a resource for all analytical work in the Coastal Inlets Research Program and provide the Corps with a central location for channel data. Partner Districts will be sought to leverage R&D funds.
7. Extend the long-term morphology modeling system newly developed in the Coastal Inlets Research Program to include the adjacent beaches, navigation channel, and flood shoal together with the ebb shoal. Validate and release the Version 2 of the model to the public.
8. Analyze field data at inlet jetties to understand the beach and jetty interaction through rip currents, developing a quantitative predictive method for rip current sediment transport.

ACCOMPLISHMENTS IN PRIOR YEARS: In FY 2004 the following was accomplished:

1. Completed R&D and held a tech-transfer workshop (50 attendees) for the Steering Module in the SMS interface, allowing automated coupling of tidal circulation (ADCIRC, M2D) and wave models (STWAVE) to account for the wave-current and current-wave interactions. The Steering Module plays a central role for integrated modeling for field use to calculate tidal circulation, waves (with wave-current interaction), and sediment transport at high resolution. This modeling system allows assessment of jetty modifications, channel infilling, and channel alignment for reduction of dredging and improved navigation safety. Successful evaluations were conducted at Shinnecock Inlet, NY; Grays Harbor, WA; Willapa Bay, WA; and Ocean City Inlet, MD.
2. Extended and completed a physical-processes based automated sediment budget system for management of inlets and adjacent beaches to include GIS features and connections to regional sediment management methodologies. The extended system was released Corps wide and to consulting companies and academia. Held three workshops to transfer the technology.
3. Extended the Reservoir Model for calculating volume change of inlet features such as ebb shoals and flood shoals, and validated the model at Ocean City Inlet, MD, and Shinnecock Inlet, NY. This technology allowed predictions to be made in support of Corps navigation projects that previously were beyond capability, accounting for the long-term (order of 100 years) evolution of inlets. Collaborated with the Regional Sediment Management Program in incorporating the Reservoir Model in its coastal modeling technology – Cascade.
4. Developed circulation models for all of the Great Lakes to validate Coastal Inlets Research Program technology for calculating wind-forced seiching. Collaborated with the Buffalo, Chicago, and Detroit Districts to validate the modeling system for the Great Lakes.
5. Developed and verified a numerical model to predict scour for regions characterized by local flow curvature, flow separation, entrainment, and flow interaction with inlet structures. Applied to Matagorda Ship Channel, TX; Ventura Harbor, CA; and Shinnecock Inlet, NY. Model is released to public through the worldwide web.
6. Updated web-based tutorial and handbook on coastal inlets called "Inlets Online" that addresses needs from the professional engineering and science level to college and high school education. Aerial photograph collection includes historic (from 1930's) to most recently acquired aerial photography around the Corps.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

7. Developed a neural-network based data-gap filling utility with predictive capability in support of field measurement and long-term simulations of water level and current.
8. Conducted two major tech-transfer workshops in association with national and international conferences (25-50 attendees) and at ERDC-CHL in association with the Coastal Engineering Manual course (50 attendees). Conducted direct training at several Corps Districts and consulting companies under contract with Corps Districts.
9. Supported Corps districts in addressing concerns on national applicability at specific inlets. These included implementation of a new jetty termination concept at Grays Harbor, WA; sand management prediction at Shinnecock Inlet, NY, for which periodic mining of the flood shoal was demonstrated to be a competitive and favorable alternative for the total inlet sediment system; Ocean City Inlet, MD, involving channel deepening, jetty rehabilitation, and sand bypassing to Assateague Island (National Park Service); and modification of deposition basin design with weir jetty at Mouth of Colorado River, TX.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Cultural Resources (NAGPRA/Curation)

SUMMARIZED FINANCIAL DATA:

Estimated Total (FY 1994 - 2010) Program cost	\$44,000,000
Allocation for FY 2004	1,545,000
Allocation Requested for FY 2005	1,391,000
Decrease of FY 2005 from FY 2004	154,000
Balance to complete after FY 2005	35,159,000

AUTHORIZATION: The Native American Graves Protection and Repatriation Act (NAGPRA) enacted on 16 November 1990 contains data gathering, reporting, consultation, and permitting provisions that have near-term and long-term implications for Civil Works programs and projects.

JUSTIFICATION: The Native American Graves Protection and Repatriation Act (NAGPRA) is a complex piece of legislation that addresses the recovery, treatment, and repatriation of Native American and Native Hawaiian cultural items by Federal agencies and museums. As defined by the Act, cultural items are human remains, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. In FY 1994, the Corps began the process of inventorying human remains and associated funerary objects and completing summaries as mandated by the legislation. In addition, the Corps has been responsible for curation of cultural resource materials collected from its water resources development projects. A Mandatory Center of Expertise (MCX), located at the St. Louis District, has been established to provide overall management of the Corps NAGPRA programs and will serve as an information source and a centralized base for curation compliance and contracting. The MCX will facilitate the assurance of consistent nationwide program implementation and operation. In addition, the Corps is responsible for the curation of 46,255 cubic feet of artifacts collected from its water resources development projects and 3,511 linear feet of associated records. Curation of these materials, the largest volume of all federal agencies responsible for this activity, is required by a number of public laws. Corps collections represent over 80% of the total DoD collections. These extensive collections are located at a variety of curation facilities across the nation. The costs are to accomplish NAGPRA work and to fund MCX curation support to the districts. The MCX, in providing NAGPRA inventories, will assist in establishing the extent of Corps holdings. Associated with efforts to complete NAGPRA, the MCX is beginning the process of effectively managing the Corps curation efforts.

PROPOSED ACTIVITIES FOR FY 2005: The MCX and certain Corps field offices will continue the process of inventorying Native American and Native Hawaiian human remains and associated funerary objects and complete summaries of unassociated funerary objects, sacred objects, and objects of cultural patrimony as mandated by the legislation. Information will be made available to interested individuals and groups through notices in the Federal Register. Through MCX provided funding, districts will continue to be engaged in formal consultation with tribes and organizations for the legislated purpose of repatriating cultural objects for which there are legitimate claims. The MCX will continue to fulfill its chartered activities in support of other military services and DoD, as well as serving in the pivotal role of assisting in the development and implementation of an agency-wide, long-term plan for the curation of USACE archeological collections (heritage assets). The MCX will also continue to work closely with USACE commands on the implementation of final guidelines and procedures for field collection of archeological materials and the long-term treatment of those collections. In this regard, the MCX will act as a source of expertise for processing and rehabilitation of USACE collections. Finally, the MCX will provide leadership in the development of a training curriculum on the treatment of heritage assets and working in consultation with all stakeholders, take initial steps to make this training available to USACE and other appropriate DoD managers and decision makers.

ACCOMPLISHMENTS IN PRIOR YEARS: A Mandatory Center of Expertise (MCX), located at the St. Louis District, was established to provide overall management of the Corps NAGPRA programs and has served as an information source, a centralized base for curation compliance and contracting. The MCX has facilitated the assurance of consistent nationwide program implementation and operation. The MCX, in providing NAGPRA inventories, has assisted in

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

establishing the extent of Corps holdings. Associated with efforts to complete NAGPRA, the MCX began the process of effectively managing the Corps curation efforts.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Dredge Wheeler Ready Reserve

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$8,000,000
Allocation for FY 2004	8,000,000
Allocation Requested for FY 2005	8,000,000
Increase of FY 2005 over FY 2004	0

AUTHORIZATION: Section 237 of the Water Resources Development Act of 1996 (WRDA 96) contained a provision requiring the Corps hopper dredge WHEELER to be placed in a ready reserve status.

JUSTIFICATION: Section 237 requires that no individual project funds may be used to fund the dredge in its ready reserve status unless the dredge is specifically used in conjunction with a project. Prior to Fiscal Year (FY) 1998, the costs for operation of the WHEELER had been reimbursed from project funds from the Operation and Maintenance, General appropriation, and subsequently charged to the Harbor Maintenance Trust Fund account as eligible navigation costs subject to reimbursement. In FY 98, the WHEELER was placed in a ready reserve status as required by the above referenced section of WRDA 96.

PROPOSED ACTIVITIES FOR FY 2005: The hopper dredge WHEELER, will remain in ready reserve status, and will be required to be able to perform emergency dredging work, but will not be assigned any scheduled hopper dredging work. The dredge will be placed in an active status in order to perform work in those instances when private industry fails to submit a responsive or responsible bid for advertised dredging, or where industry has failed to perform under an existing contract.

ACCOMPLISHMENTS IN PRIOR YEARS: The WHEELER was kept at the dock, with sufficient crew to respond to any unforeseen requirement within 72 hours and to work for approximately three continuous weeks. The dredge was maintained in a fully operational state and periodically performed routine dredging operations to test equipment and keep the crew trained and prepared. The WHEELER performed approximately 55 days of training during the year. In every year but one, since being placed in ready reserve status, the WHEELER was called out to perform urgent dredging to assist industry dredges in restoring navigation channels and waterways.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Dredging Data and Lock Performance Monitoring System

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$1,062,000
Allocation for FY 2004	1,180,000
Allocation Requested for FY 2005	1,062,000
Decrease of FY 2005 from FY 2004	118,000

AUTHORIZATION: These efforts are necessary to provide data for efficient management of Congressionally authorized navigation projects, as well as to respond to specific public laws, including PL 96-269 (Minimum Dredge Fleet) and PL 100-656 (Small Business Set-Aside), for meeting the Government Paperwork Elimination Act (GPEA) and Clinger-Cohen/IT Management Reform Act.

JUSTIFICATION:

a. Dredging Data: Collection of dredging data is a continual process to support the National Dredging Program. Tasks include data collection and multi-year analyses of dredging costs and quantities for previous, current and future Fiscal Years, including both new work and maintenance dredging performed by the Corps and commercial dredging industry. Analyses include nationwide and regional trending of dredging cost and quantity data. Funding also supports the management; enhancement, operation and maintenance of the Dredging Information System (DIS) which contains dredging data on all Corps performed and contracted dredging of Federal projects. The DIS is a transactional system within the Operations and Maintenance corporate information system. The DIS data includes advertising schedules, contract award and completion data (actual quantities dredged, cost, type dredge used, etc.). The Dredging Information System is an interactive on-line system with District data input directly into the central database and is immediately available for output reports. Reports and data are accessible Corps-wide via the Corps intranet and biweekly updated reports are disseminated to the public via the World Wide Web. The Dredging Statistics Program, which manages the DIS, has been successful in rapidly addressing all dredging data requests from Corps and other customers. These funds include appropriate software and hardware upgrades, user assistance and training, and implementation of program performance measures. The DIS is a feeder system to the Corps performance based budgeting.

b. Lock Performance Monitoring System (LPMS): The Lock Performance Monitoring System provides operational and strategic management data and performance measures for the Corps navigation projects and program. The funds cover salaries, quality control, database management, software and hardware upgrades, user assistance, and CEEIS network services for the Corps nationwide program. This also includes funding for lock characteristics, decision support systems and project database development. These data systems are both transactional systems within the Operations and Maintenance corporate information system. Items 1a (DIS) and 1b (LPMS) are reported under OMBIL-Plus in ITIPS totaling \$450,000 of the overall OMBIL-Plus cost.

c. Future National Dredging and Port Requirements: To maintain the nation's Federal navigable waterways, approximately 270 million cubic yards of material are dredged in the United States annually. Technological change in the shipping industry is a continual process requiring ongoing efforts to adequately plan for future maintenance dredging activities. Update of current and future needs using the Dredging Needs Database on vessel characteristics, channel dimensions, and commodity origins-destinations and other cargo data is needed to support the Corps maintenance dredging program. Tasks include the annual update of the world fleet composition and forecasts; analysis of current and projected commodity and traffic flows and trade patterns; and new work involving use of the world fleet and Waterborne Commerce Statistics Center's vessel transits to determine characteristics of vessels using U.S. ports

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

PROPOSED ACTIVITIES FOR FY 2005: Continue on-going Lock and Dredging automated information system operations, maintenance, essential upgrades, security and user support, plus a planned in-depth database review for dredging. Analysis pertaining to fleet, traffic and trade scheduled.

ACCOMPLISHMENTS IN PRIOR YEARS: Performed operations, maintenance, system upgrades, security and user support for DIS and Lock Performance Monitoring System. Both systems are part of the Corps centralized, sole source of data/information for the Corps and industry. Provided critical data for the assessment of dredge bidding competition. The Dredging Needs Database was updated using CY 2002 data. Conducted in-depth review dredging information system data and began implementation of changes in response to the GAO study of benefits and effects of the Corps dredge fleet.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Dredging Operations and Environmental Research (DOER) Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$6,080,000
Allocation for FY 2004	6,755,000
Allocation Requested for FY 2005	6,080,000
Decrease of FY 2005 from FY 2004	675,000

AUTHORIZATION: The Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, and 1999 contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandates a continuing need for innovative and enhanced technology.

JUSTIFICATION: The last comprehensive research effort on contaminated sediments and dredged material management was completed in 1978 under PL 91-611. The Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, and 1999 contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandates a continuing need for innovative and enhanced technology. Contaminant detection limits are now so low that sub-trace levels of toxic substances are identified. High profile contaminants continue to plague numerous Federal and permitted dredging projects. Costs for beneficial use alternatives are escalating. Traditional upland disposal areas have reached or are reaching capacity and are becoming scarce. Aquatic placement is under increased scrutiny due to habitat degradation concerns and increased listing of aquatic threatened and endangered species with pressure to end this economically preferable alternative resulting in increased litigation with correspondingly increased costs. Environmental standards and controls for all dredged material placement alternatives are more restrictive and will grow in number. Risk-based assessments and management will dominate; unfortunately the Corps' corporate technology base is diminishing and must be maintained. Beneficial use/reuse of dredged material is a priority and environmental resource protection is a mandate. The continued economic viability and national defense of the Nation will depend upon our ability to remove, manage and beneficially reuse dredged material in a cost-effective and environmentally responsible manner. Continued engineering and environmental innovation will be essential to keep costs within budget constraints.

The DOER Program is an integral and highly beneficial component of the Corps navigation dredging and environmental protection missions. Dredging and disposal must be accomplished within a climate of increased dredging workload, fewer placement sites, environmental constraints, and decreasing fiscal and manpower resources. Balancing environmental protection with critical economic needs while accomplishing dredging activities is a major challenge. The program has validated innovative technologies for high profile contaminants and developed risk based assessments that will significantly reduce testing costs at virtually all harbors. Methods for reclamation and reuse of contaminated sediments from upland disposal areas for beneficial purposes as well as increased capacity are key components of the program that will result in tremendous savings.

Major focus areas of DOER include, (1) innovative technologies research, (2) environmental resource protection, (3) dredged material management, and (4) risk research.

PROPOSED ACTIVITIES FOR FY 2005:

1. Innovative Technologies: Identify, demonstrate, and evaluate emerging dredging, placement and other technologies such as: a) Punaise Demo, b) specialized dredges for contaminated sediment removal, c) confined disposal facility reclamation, d) silent inspector for cutter suction and dustpan dredges, e) Dredging Operations Decision Support System and, f) fluid mud quantification establish navigable depth.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

2. Environmental Resource Protection: Develop effective engineering and construction alternatives to protect environmental resources while allowing dredging operations to proceed in an economically feasible manner. Emphasis will be placed on the endangered river sturgeon and salmonid protection, habitat protection from sedimentation and blasting, measures to reduce need for environmental windows.
3. Dredged Material Management: Develop and validate numerical models, software tools for environmentally and cost effective operations and to address regulatory, habit and beneficial uses of dredged material. Special emphasis will be placed on GIS based dredged material management, dredging and placement site dispersion models, contaminant exposure models for confined disposal areas, and beneficial uses testing, evaluation and database guidance.
4. Risk: Develop quantitative methods and tools to support risk analysis of the environmental and economic benefits/cost associated with the full range of dredged material management options. Emphasis is placed on; trophic transfer of sediment contaminants, validation of chronic/sublethal bioassays, risk based screening for confined disposal facility contaminant pathways, improved effectiveness of aquatic capping, and treatment technologies for contaminated sediments.

ACCOMPLISHMENTS IN PRIOR YEARS: In FY 2004, the DOER program successfully completed all of the project requirements and completed the following products:

1. Innovative Technologies: Transferred technology to a wide body of stakeholders that addressed operational, economic, and environmental components of the Corps dredging program in full coordination and cooperation with other appropriate agencies and offices such as: Environmental Protection Agency, National Marine Fisheries Service, US Fish and Wildlife Service, American Association of Port Authorities (AAPA) and state natural resource managers. Aggressive technology transfer was conducted through multiple media and rapid technology application that ensured that research products were integrated into decision making at Corps projects and were made available to port authorities and other navigation project stakeholders, (e.g.,. water injection dredging, mechanical dewatering, reactive barrier capping, real time dredging management reporting, initiate Decision Support System, and fluid mud definition).
2. Environmental Resource Protection: Identified, evaluated and developed innovative tools, databases and software, equipment, and technology to improve the design, operation, and management of Corps maintained navigation projects. Addressed problematic environmental resource issues, such as environmental windows or threatened and endangered species, using a combination of innovative engineering and scientific approaches (e.g., endangered fish assessment/protection, management for bird habitat, risk based approach to endangered/protected species management, T&E website – sea turtles, sedimentation impacts to habitat, submerged aquatic vegetation habitat protection, and environmental “best management practices”).
3. Dredged Material Management: Developed dredged material handling, transport, and placement options, which are operationally efficient, environmentally sound and cost effective (e.g., GIS dredged material management system, WEB-based assessment tools, suspended sediment tracking model, sediment stability screening tools predict resuspension due to dredging, confined disposal management technology, and beneficial uses of dredged material).
4. Risk: Applied a comparative risk-based framework in the assessment and management of contaminated dredged material and to develop logical decision support tolls that quantify uncertainty and facilitate efficient decision making (e.g., dissolved contaminant estimation and assessment, contaminant bio-availability, CDF contaminant loss model, contaminant micromethod of analysis, volatile contaminant losses from sediments, field validation of chronic/sublethal testing, risk assessment decision support tool, and risk management decision analysis program).

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Dredging Operations Technical Support (DOTS) Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$1,391,000
Allocation for FY 2004	1,545,000
Allocation Requested for FY 2005	1,391,000
Decrease of FY 2005 from FY 2004	154,000

AUTHORIZATION: These efforts are necessary to provide support for management of Federal navigation projects.

JUSTIFICATION: Maintenance of the nation's navigation projects requires compliance with numerous complex environmental statutes and Presidential Executive Orders. The Dredging Operations Technical Support (DOTS) Program fosters the "one-door-to-the-Corps" concept by providing comprehensive and interdisciplinary technology transfer, technology application, and training essential to all stakeholders involved in Corps navigational dredging projects. DOTS is managed within a centralized program to maximize cost effectiveness and expeditiously implement National policies, laws, and complex technical requirements on a consistent basis. The DOTS Program focuses on application of state-of-the-art technology and research results to field problems. Emerging environmental concerns as well as advances in scientific technology often cause uncertainty in administration of the Corps' navigational dredging program. The DOTS program's technology transfer function provides access to an extensive, up-to-date, consistent technology base and facilitates rapid, proactive responses to technical issues as they emerge. This fosters networking and solutions to common problems confronting the navigation dredging community. Short-term work efforts to address generic Corps-wide technical problems encountered during maintenance of navigable waterways and infrastructure are major features of the DOTS Program. Technology transfer and demonstration of new and emerging techniques with potentially high returns on investment for management of Corps navigation maintenance projects are also important DOTS activities. By disseminating knowledge of new research and development efforts to field offices constrained by staff reductions, the DOTS Program will continue to perform a critical technology transfer role in support of all O&M navigation projects.

PROPOSED ACTIVITIES FOR FY 2005: Renewed emphasis will be placed on effective transfer of technology developed by the Corps and others engaged in maintenance and management of navigation structures and navigable waterways. Typical technology transfer topics include: management of Confined Disposal Facilities; management of contaminated dredged material; application of innovative risk-based technologies to assess contaminated dredged material; maintenance of coastal inlets and adjacent shorelines; shoreline stabilization and river training methodologies; assessment and management protocols for beneficial uses of dredged material; channel realignments; protection of threatened or endangered species; equipment selection; rational application of environmental windows and alternative best management practices; lock and dam maintenance needs; channel and harbor maintenance activities; ship simulation applications; and numerical modeling methods for resolution of engineering and environmental issues. A trend for increasing need for technical responses, evidenced by consistent growth in requests submitted by field offices on an annual basis, coincides with expansion of DOTS to cover all navigation-related issues in addition to dredging and dredged material disposal.

Personnel turnover due to retirement and attrition within the Corps and other regulatory agencies has created a growing demand for training in diverse technological areas. DOTS-sponsored training of Corps staff and stakeholders who have regulatory authority over Corps navigation maintenance activities will convey the latest findings on environmental and engineering techniques associated with maintaining navigable waterways. Training topics include dredging and dredged material disposal; coastal and inland channel maintenance needs; water quality and related aquatic environmental issues; new and emerging techniques for accurate determination of compliance with environmental protection statutes regarding management of dredged material and other features of navigation projects; development and preparation of manuals jointly with the EPA that implement the inland and ocean disposal programs; and short-term work efforts to address generic Corps-wide technical dredging and dredged material management problems related to navigation projects.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

DOTS will continue to fill a void with respect to outreach, providing a broad spectrum of educational materials related to the Corps' navigation mission. Relying on internet resources, this activity has rapidly become an extremely effective means of conveying comprehensive, accurate information to a broad audience, including students, educators, and the general public as well as professionals.

ACCOMPLISHMENTS IN PRIOR YEARS: In FY 2004, the DOTS program successfully met all of its goals established for technical support, technology transfer, and outreach. Technical questions, from Federal and state agencies and private concerns dealing with implementation of the inland and ocean testing manuals, continued to be addressed. As mandated by the 1972 London Convention, the DOTS program reports ocean dumping activities to the EPA and the International Maritime Organization. The program has conducted 21 sediment management seminars since 1991 that have been attended by over 4,800 personnel from Corps districts, federal, state, and local agencies, industry, and environmental protection groups. Instruction focused on state-of-the-science techniques in regulating, testing, and managing dredged material. The program also continued to provide specific guidance for the assessment and protection of threatened and endangered species associated with navigation projects. A joint Corps/EPA task force made significant progress toward formulation of a combined, generic ocean and inland disposal implementation manual. This effort fosters consistency in dredged material testing and management between the Clean Water and Marine Protection, Research and Sanctuaries Acts. This builds upon and serves as a companion to the completed final version of the Upland Testing Manual. Expansion, maintenance and updating of several web-based databases provided enhanced access to important sources of information, such as the Environmental Residue and Effects Database (ERED), which continued to be critical for successful implementation of the CE/EPA ocean and inland testing manuals for dredged material disposal. New databases that extend accessibility to related resources, including upland plant toxicology, and tools for risk assessment applications were brought online.

The DOTS Program continues to be an exceptionally successful conduit for navigation and dredging-related information, as evidenced by the distribution of thousands of technical manuals, bulletins, technical notes and reports currently found on the DOTS website (www.wes.army.mil/el/dots). The DOTS website provides a comprehensive information retrieval system for all relevant products related to regulating, maintaining, and managing the nation's navigable waterways. For example, the DOTS-sponsored Educational Outreach site (<http://education.wes.army.mil>) has become the most active of all Corps websites, visited by over three million users in its first year of operation, with continued growth (currently over 13,000 visits per day) expected.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Earthquake Hazards Reduction Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$280,000
Allocation for FY 2004	300,000
Allocation Requested for FY 2005	270,000
Decrease in FY 2005 from FY 2004	30,000

AUTHORIZATION: This program is being conducted under the authority of PL 101-614, November 1990, National Earthquake Hazards Reduction Program Re-authorization Act and individual project authorizations for maintaining safety of personnel and emergency response capability.

JUSTIFICATION: The purpose of this program is to respond to the requirements of PL 101-614, National Earthquake Hazards Reduction Program (NEHRP) and Executive Order (EO) 12941, Seismic Safety of Existing Federal Buildings. The EO directs all Federal departments and agencies to develop an inventory of their owned and leased buildings and an estimate of the cost of mitigating unacceptable seismic risks in their buildings. The objective of PL 101-614 is to establish and initiate for buildings and lifelines a systematic approach to reducing loss of life, injuries, and economic costs resulting from earthquakes in the United States. Lifelines are defined as public works and utility systems.

PROPOSED ACTIVITIES FOR FY 2005: Continue development of mitigation program options to meet the executive order requirements and the legal opinion concerns, refine the develop technical seismic building evaluation criteria, refine the develop programmatic seismic criteria, refine the develop guidance or the seismic evaluation and risk mitigation of lifeline facilities, and development of building and powerhouse mitigation plan options, improve information transfer by use of videoconference calls and development of a seismic web site, and develop reports on selected study items. (Note: Significant funds were used to inspect and evaluate drainage pipes through levees. During recent floods seepage along these pipes showed them to be critical weak points in levee protection systems.) USACE has a legal opinion that indicates that once we have identified seismically vulnerable structures we are legally responsible to develop a plan to mitigate these vulnerabilities. The requested funds will be used to improve seismic information and requirement transfer, adjust the agency specific mitigation plan (if necessary), provide the tools for implementation of the program that would lead to supportable, defensible mitigation decisions, provide assistance to districts in the development of mitigation concepts and designs, provide support to HQUSACE in oversight and management of the mitigation program, provide technical support to HQUSACE, maintain technical seismic expertise, identify potential cost savings areas for study, develop guidance for additional lifeline systems not previously covered in commercially available standards or existing USACE guidance, develop guidance for operations personnel, develop a mitigation plan for the USACE lifelines, update and maintain database. The development and updating of guidance for the seismic evaluation and risk mitigation of lifeline facilities will continue as well.

ACCOMPLISHMENTS IN PRIOR YEARS: Over 12,000 owned buildings and powerhouses were inventoried and data collected, seismic screenings of over 700 buildings in all seismic regions, seismic evaluations were performed on over 200 buildings and powerhouses in various geographic regions primarily in high and moderate seismic regions, development of reports for FEMA to be forwarded to Congress on both buildings and powerhouses, development of seismic evaluation guidance for buildings and lifelines: building evaluation criteria, powerhouse evaluation criteria, lifeline criteria for intake towers, navigation locks, and powerhouses, two seismic evaluation seminars for district personnel, technical support to the districts in accomplishing the evaluations, over 30 rehabilitation case studies including seismic mitigation cost estimates (rehabilitation, replacement, or demolition) for buildings, over 25 rehabilitation cost estimate studies for structural or nonstructural powerhouse deficiencies, inventory of USACE owned buildings including powerhouse superstructures, inventory of USACE leased buildings with estimated populations and recommendations for leasing procedures, development of mitigation program options to meet the executive order

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

requirements and the legal opinion concerns, develop technical seismic building evaluation criteria, develop programmatic seismic criteria, develop guidance for the seismic evaluation and risk mitigation of lifeline facilities, develop associated costs studies to include asbestos and lead based paint costs associated with rehabilitation, adapt the building and powerhouse inventory database to an Oracle system compatible with the Operations and Maintenance Business Information Link (OMBIL) program and revise building report to reflect the new criteria.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Reserve For Key Emergency Maintenance/Repairs

SUMMARIZED FINANCIAL DATA:

Allocation for FY 2004	\$0
Allocation Requested for FY 2005	35,000,000
Increase of FY 2005 from FY 2004	35,000,000

AUTHORIZATION: Inherent in various authorizations to operate and maintain specific projects.

JUSTIFICATION: The reserve would be established to set aside some funds for use on unforeseen urgent maintenance and repairs at key facilities. Uses of the Fund will be subject to the approval of the Assistant Secretary of the Army for Civil Works ASA (CW). Unused funds will be carried over to following fiscal years for similar application to similar, high priority maintenance and repairs. The Fiscal Year 2005 budget provides \$35 million for the Fund.

PROPOSED ACTIVITY FOR FY 2005: The funds will be held in reserve and utilized only to cover unforeseen urgent maintenance and repairs at key facilities as determined by the ASA (CW).

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Facility Protection

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	12,000,000
Allocation for FY 2004	13,000,000
Allocation Requested for FY 2005	12,000,000
Decrease of FY 2005 from FY 2004	1,000,000

AUTHORIZATION: PL 84-99; PL 93-288; Executive Orders 10480 and 12656 which cite several acts including PL 93-288, the basis for the Federal Response Plan; and Executive Order 13228 which provides for Agency responsibilities regarding Homeland Security.

JUSTIFICATION: On 11 September 2001, our Nation suffered a loss of unimaginable proportions, with terrorist attacks in New York and Washington. These events have emphasized the resolve of terrorists to weaken our Nation by inflicting massive casualties and destroying vital elements of our infrastructure.

In response to the attacks of September 11, 2001, the Corps compiled a list of critical public assets in accordance with Presidential Decision Directive number 63. In 2001, the Corps initiated vulnerability assessments (RAM-D) of critical water resources infrastructure to determine vulnerability to terrorist attacks. A clear need exists for improved security and protection at vital Corps water resources and administrative facilities supporting our missions. Protection of the Corps administrative facilities incorporates the elements of detection, protection, and response. (a) Detection: increased surveillance and awareness, crime watch program. (b) Protection: Continued implementation of protection measures. (c) Response: local law enforcement support, local guard force. Work has been prioritized by consequential assessments of potential terrorist attacks. Funding applied to situations vulnerable to loss of life or economic consequences exceeding a certain threshold. The total estimate for development and implementation of facility security O&M activities in FY05 is \$84 million. Of this amount \$72 million is for project specific requirements, which are addressed with funding for individual projects; and \$12 million is for this Remaining Item to cover protection of all non-project specific protective measures at administrative buildings and other general use facilities.

PROPOSED ACTIVITIES FOR FY 2005: The requested funds will be used to protect administrative facilities and laboratories (projects are protected with project specific funds), complete implementation of facility protection standards at MR&T facilities and continue monitoring other Home Land Security (HLS) activities, continue Force Protection Standards for non-project specific Corps Offices, and continue to interface with other Federal, state and local government offices and private industry.

ACCOMPLISHMENTS IN PRIOR YEARS: The appropriated funds were used to develop and implement security measures including surveillance, security guards and physical hardening at non-project specific administrative facilities ad laboratories. In addition, the funds were also used to continue implementation of facility protection standards at MR&T facilities.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Great Lakes Sediment Transport Models

SUMMARIZED FINANCIAL DATA:

Estimated Total Program Cost	\$12,500,000
Allocation for FY 2004	1,000,000
Allocation Requested for FY 2005	900,000
Decrease of FY 2005 from FY 2004	100,000
Balance to Complete after FY 2005	7,330,000

AUTHORIZATION: Section 516(e), Water Resources Development Act of 1996, as amended by Section 334, Water Resources Development Act of 2000.

JUSTIFICATION: Under Section 516(e) of the Water Resources Development Act of 1996, the Corps is directed to develop sediment transport models for tributaries to the Great Lakes that discharge to Federal navigation channels or Areas of Concern (AOCs). These models are being developed to assist state and local resource agencies evaluating alternatives for soil conservation and nonpoint source pollution prevention in the tributary watersheds. The ultimate goal is to support state and local measures that will reduce the loading of sediments and pollutants to navigation channels and AOCs, and thereby reduce the costs for navigation maintenance and sediment remediation.

PROPOSED ACTIVITIES FOR FY 2005: FY 2005 funds will be used to continue or complete development of models at ten tributaries (Burns Waterway, Indiana; Trail Creek, Indiana; Dead River, Michigan; Grand River, Michigan; St. Louis River, Minnesota; Genesee River, New York; Eighteen Mile Creek, New York; Black River, Ohio; Cuyahoga River, Ohio; Sandusky River, Ohio) and conduct scoping and coordination for future model development at the next set of priority tributaries (River Raisin, Michigan and Grand River, Ohio). Districts will provide limited, follow-up technical support to state and local partners that are using models developed under this program to reduce loadings of sediments and contaminants to Great Lakes tributaries, thereby reducing future dredging requirements at Federal navigation channels and promoting the restoration of beneficial uses at Great Lakes Areas of Concern.

ACCOMPLISHMENTS IN PRIOR YEARS: Model development has been completed at the following tributaries (Saginaw River, Michigan; Nemadji River, Minnesota/Wisconsin; Menomonee River, Wisconsin; Clinton River, Michigan; and, Grand Calumet River, Indiana). The model developed for the Nemadji River is being utilized by the county and NRCS to better manage forestry practices in the watershed to reduce soil and streambank erosion. The model of the Grand Calumet River is being used to support the State of Indiana's development of Total Maximum Daily Loads (TMDLs) for the River. The model for the Menomonee River is being used by local agencies to manage urban development and evaluate stream restoration projects. State and local partners have identified uses for models under development including design and placement of filter strips and other soil conservation measures, management of urban development and construction practices, streambank stabilization planning, and contaminated sediment cleanup evaluations.

In FY 2004, model development is being initiated or underway at ten tributaries (Burns Waterway, Indiana; Trail Creek, Indiana; Dead River, Michigan; Grand River, Michigan; St. Louis River, Minnesota; Genesee River, New York; Eighteen Mile Creek, New York; Black River, Ohio; Cuyahoga River, Ohio; Sandusky River, Ohio), and will be completed at two others (Buffalo River, New York and Maumee River/Auglaize River, Ohio). A report to Congress, as directed in Section 334, WRDA 2000, summarizing the status of program implementation will be completed.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Protection of Navigation (Four Items)

Protection, Clearing, and Straightening of Channels

Removal of Sunken Vessels

Waterborne Commerce Statistics

Harbor Maintenance Fee Data Collection

SUMMARIZED FINANCIAL DATA:

Estimated Annual cost of Continuing Program	\$5,374,000
Allocation for FY 2004	5,970,000
Allocation Requested for FY 2005	5,374,000
Decrease of FY 2005 from FY 2004	596,000

AUTHORIZATION: Protection, Clearing, and Straightening of Channels - Section 3 of the 1945 River and Harbor Act (as amended by Section 915 (g) of the 1986 Water Resources Development Act) provides continuing authority for limited emergency clearing of navigation channels not specifically authorized by Congress. A limit per project is not specified; however, in any given year, a maximum of \$1,000,000 may be used nationwide.

Removal of Sunken Vessels - Removal of sunken vessels, or other similar obstructions, is governed by Sections 15, 19, and 20 of the River and Harbor Act of 1899, as amended.

Waterborne Commerce Statistics - The USACE serves as the Federal Central Collection Agency, and is the sole U.S. Government source, for U.S. domestic and foreign (U.S. foreign statistics mission transferred to USACE from Census in FY 1999) waterborne commerce and vessel statistics in conformance with the River and Harbor Act of 1922 as amended.

Harbor Maintenance Fee Data Collection - PL 103-182.

JUSTIFICATION: The budget estimate provides for carrying out the following work:

- a. Protection, Clearing, and Straightening of Channels - Work is undertaken as emergency measures to clear or remove unreasonable obstructions to navigation in navigable portions of rivers, harbors and other waterways of the U.S., or tributaries thereof, in order to provide existing traffic with immediate and significant benefit. The amount requested is an estimate based on historical experience. If actual requirements are more than estimated, funds will be reprogrammed to meet demonstrated needs.
- b. Removal of Sunken Vessels - Primary responsibility for removal belongs to the owner, operator, or lessee. If the obstruction is a hazard to navigation and removal is not undertaken promptly and diligently, the Corps may obtain a court judgement requiring removal, or remove the wreck and seek reimbursement for the full cost of removal and disposal. Determinations of hazards to navigation and Federal marking and removal actions are coordinated with the United States Coast Guard in accordance with a memorandum of understanding between the two agencies dated 16 October 1985. Removal procedures are outlined in 33 CFR 245. If removal requirements are more than estimated, funds will be reprogrammed to meet actual needs.
- c. Waterborne Commerce Statistics - Activities supporting this national statistics mission include: (1) collecting and reporting (includes enforcement role) of water transportation statistical data; (2) automated systems development and operation (transactional systems within Operations and Maintenance corporate information

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

system), processing, compiling, and publishing (monthly, quarterly, and annually) statistical data and information on waterborne commerce and vessels moving on the internal U.S. waterways, the Great Lakes, and through all U.S. ocean channels and ports; and (3) compiling and publishing the official U.S. documentation of U.S. vessels engaged in commerce, their principal trades and zones of operation. The data provide essential information for navigation project investment analyses and annual funding prioritization for operations and maintenance of existing projects; as project output information for computation of performance measures; for input into the U.S. National Accounts; and for regulatory, emergency management decisions, and homeland defense. This item is reported under OMBIL-Plus in ITIPS and is \$1,350,000 of the total OMBIL-Plus cost.

d. Harbor Maintenance Fee Data Collection - Up to \$5 million is authorized to be used annually for the administration of the Harbor Maintenance Trust Fund. Most of these funds are used by Customs. The Corps is required to collect data on domestic and foreign shippers of waterborne commerce subject to the Harbor Maintenance Tax (HMT) and provide it to Customs for enforcement. Analysis of Harbor Maintenance Trust Fund (HMTF) revenues and transfers is required to validate the adequacy of the HMTF in light of the uncertainty over the legal and international challenges to the HMT, and to document the operation of the trust fund in the *Annual Report to Congress*. Analysis of waterborne commerce shipments and vessel movement data is also needed to respond to legal questions to the HMT; to analyze alternative funding options; and to assess the economic and competitiveness impacts of other potential funding sources. Therefore the Corps requires a portion of the administrative funding. The recent transfer of the Foreign Waterborne Transportation Statistics Program to the Corps will require the data processing system to be expanded to include validation of users engaged in foreign trade, in addition to domestic users. Funds will also be used to modify computer programs to conform to changes dictated by Customs' Automated Commercial Environment. Requested funds are needed to operate and enhance the system to analyze, enforce, collect and validate harbor usage information required by the Customs Service for auditing HMT collections.

FUNDING PROFILE

	Actual FY 2003	FY 2004	FY 2005
(a) Protection, Clearing, and Straightening of Channels	\$ 50,000	\$ 50,000	\$ 45,000
(b) Removal of Sunken Vessels	\$ 500,000	\$ 500,000	\$ 450,000
(c) Waterborne Commerce Statistics	\$4,516,520	\$4,745,000	\$4,271,000
(d) Harbor Maintenance Fee	<u>\$ 642,931</u>	<u>\$ 675,000</u>	<u>\$ 608,000</u>
TOTAL	\$5,541,000	\$5,970,000	\$5,374,000

PROPOSED ACTIVITIES FOR FY 2005: Continue ongoing programs to keep channels clear. Continue nation's waterborne commerce, vessel and shipper data and statistics programs by on-going operations, maintenance, security, adequate upgrades plus work with industry and users to insure enhanced operations at a minimum level of burden. Assist Customs with the development of their Customs Modernization Program to Commercial Environment/International Trade Data System.

ACCOMPLISHMENTS IN PRIOR YEARS: Performed necessary channel operations. As the Federal Statistical agency for waterborne commerce and vessel activities, not only performed on-going operations, maintenance, security and enhancements to automated information systems and the statistical operation, but collaboratively worked with Federal partners, such as U.S. Customs and with industry.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Inland Waterway Navigation Charts

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$3,708,000
Allocation for FY 2004	4,120,000
Allocation Requested for FY 2005	3,708,000
Decrease in FY 2005 from FY 2004	412,000

AUTHORIZATION: PL 85-480, approved 2 July 1958, authorizes the Commander, USACE to publish information pamphlets, maps, brochures, and other material on river and harbor, flood control, and other civil works activities, including related public park and recreation facilities that may be of value to the general public.

JUSTIFICATION: This effort provides Corps' Electronic Navigational Chart (ENC) data for all inland waterways and other federal navigation channels maintained by the Corps to be used by commercial Electronic Chart Systems (ECS), which, when combined with the existing Differential Global Positioning System (DGPS), will improve the safety and efficiency of marine navigation in both inland and coastal waterways of the United States. On inland waterways, the Corps will collect more accurate survey and mapping data than is currently on its paper charts, and produce Inland Electronic Navigation Charts (IENCs) in accordance with navigation users and ECS vendors. When combined in the commercial ECS will greatly improve the safety and efficiency of navigation. This will allow safe navigation through bridge openings during fog and other bad weather conditions as well as during heavy traffic situations, and provide an accurate display for other systems such as radar and Automatic Identification Systems. The Corps will use the S-57 international data format, which is consistent with electronic chart products produced by the National Oceanic and Atmospheric Administration (NOAA), and the chart products produced by the two agencies will be coordinated for compatibility in adjoining areas. The Corps will also coordinate with the U.S. Coast Guard for aids to navigation information and collaboration rules for chart carriage by waterway users. In coastal and Great Lakes areas, the Corps will produce standardized channel conditions chart products that will provide consistent and reliable information to NOAA for chart updates, in accordance with Water Resources Development Act of 2000, Section 558. Similar channel chart products will be provided to navigation users, and these coastal and Great Lakes channel condition chart products will also follow the S-57 format. Such ENC development and publication activities are in accordance with National Transportation Safety Board recommendations to the Corps, and subsequent commitments made by the Chief of Engineers.

PROPOSED ACTIVITIES FOR FY 2005: Continue development of chart coverage for the Ten-Tom and Illinois Waterway, and Cumberland, Tennessee, and Arkansas Rivers – 1,499 river miles; update features for the Mississippi, Ohio, Red, Atchafalaya, and Black Warrior Tombigbee Rivers – 2,993 river miles; continue development of channel framework for coastal and Great Lakes areas; and continue data standards coordination with other Federal agencies and international standards organizations.

ACCOMPLISHMENTS IN FY 2004: New chart development – 1499 river miles: Began development of chart coverage for the Ten-Tom and Illinois Waterway, and Cumberland, Tennessee, and Arkansas Rivers; Chart revisions and updates – 2,600 river miles: Published updated chart cells for the Mississippi, Ohio, Red, and Atchafalaya Rivers; performed tests and demonstrations aboard industry vessels and continued collaboration with European Inland ECDIS for coordinating chart data standards.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Monitoring of Completed Navigation Projects

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY2003-2008) Program Cost	\$10,000,000
Allocation for FY 2004	1,750,000
Allocation Requested for FY 2005	1,575,000
Decrease of FY 2005 from FY 2004	175,000
Balance to Complete Program after 2005	6,675,000

AUTHORIZATION: These efforts are necessary to provide data for efficient management of Federal navigation projects.

JUSTIFICATION: The Corps operates and maintains more than 800 navigation projects encompassing more than 25,000 miles of waterways. The Corps needs a national program to identify the best navigation project practices and use them to improve all navigation projects' performance. Optimizing projects' performance requires that they be monitored, evaluated against preconstruction projections and present needs, and the lessons learned translated into proactive management guidance for Corps Districts. Information gained from monitoring navigation projects, including changes in sediment transport, water levels, currents, waves, flushing, river flows and other hydraulic phenomena with associated environmental impacts, will be used to verify design expectations, determine benefits, and identify operational and maintenance efficiencies. Information collected from monitored navigation projects can improve projects' performance and optimize opportunities for environmental enhancement. Information collected and analyzed on a national basis documents successful designs, disseminates lessons learned on projects with problems, and provides upgraded field guidance that will help reduce life-cycle costs on a national scale.

Selective and intensive monitoring of Civil Works navigation projects is executed to acquire information to improve project purpose attainment, design procedures, construction methods, and operation and maintenance (O&M) techniques. Both shallow- and deep-draft navigation projects located in rivers, reservoirs, lakes, estuaries, and the coastal zone are included in this program. Projects that will potentially provide maximum life-cycle cost savings are identified and those that best address high-priority cost savings are selected for monitoring and evaluation. Monitoring plans are developed jointly by Corps Districts and the US Army Engineer Research and Development Center. They consist of either a comprehensive detailed survey to verify post-construction conditions on a one-time basis or a repetitive collection of field data. The intensive data are analyzed and the results compared to the pre-construction predictions to verify or upgrade existing design guidance for minimizing O&M cost and assuring project benefits. The analyses include structural, topographic, bathymetric, and hydrodynamic responses and intercomparisons of projects when applicable. Reductions in program funding in recent years have minimized initiating new monitoring projects.

Coordination between the Corps and other Federal, state, and local agencies is essential for proper accomplishment of this program. In addition to satisfying Corps' requirements, the data are made available through publications and will be of value to local, State, and other Federal agencies tasked with the development and implementation of regional coastal and inland navigation management policies. Results are communicated to member agencies of the Marine Transportation System (MTS) committees.

PROPOSED ACTIVITIES FOR FY 2005: Coastal and Hydraulics Engineering Technical Notes as well as technical reports will be published and disseminated to the field immediately with improved/corrected design guidance. A technical report regarding findings and conclusions of periodic inspections of the Crescent City Harbor, CA, breakwater will be published, and a periodic inspection of the Cleveland Harbor, OH, east breakwater will be completed. The periodic data sets are used to improve understanding in the design, construction, and maintenance of both existing and future structural projects, and will help avoid past design deficiencies that failed and/or resulted in high maintenance projects. A technical report providing results of monitoring coastal hydrodynamics, sediment transport and structural conditions at Aguadilla Bay Harbor, Puerto Rico, will be published. A technical report also will be published on monitoring of riverine hydrodynamics

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

and sediment transport processes for minimizing dredging on the upper Mississippi River training structures at Pool 13. Additional sites will be selected for monitoring. Monitoring of several navigation projects will continue. Included are monitoring of bendway weirs at the Greenville River Bridge reach of the Mississippi River to determine their navigation, sedimentation, and structural effectiveness. Ship motion data obtained for vessels in existing and improved reaches of the Houston Ship Channel will continue to be analyzed and used to validate/enhance ship-to-ship interaction in simulation models. In addition, monitoring will continue for "pocket wave absorbers" used in the Great Lakes to reduce wave action in vertical, parallel-wall harbor entrances and mooring areas.

ACCOMPLISHMENTS IN PRIOR YEARS: In FY 2004, a technical report providing results of periodic inspections of coastal structures previously monitored by the MCNP program was published. Additional technical reports, including one on stone degradation of coastal structures located in the Great Lakes, and another on monitoring of tidal inlet improvements at Barnegat Inlet, NJ, were published. Additionally, a technical report was published summarizing lessons learned and providing guidance from monitoring completed navigation projects. Coastal and Hydraulics Engineering Technical Notes were published for each work unit in the MCNP program providing interim results of the monitoring efforts. The MCNP web site also was enhanced. All MCNP publications are available electronically through the web site. A periodic inspection of 42-ton dolosse armor units at the Crescent City Harbor, CA, breakwater was conducted, and monitoring of several additional navigation projects (Tedious Creek, MD; Aguadilla Harbor, PR; Tom Bevill Lock and Dam, AL; Upper Mississippi River training structures at pools 8 and 13; bendway weirs at Greenville Bridge Reach, Mississippi River; ship motions for commercial vessels at Houston Ship Channel, TX, and "pocket wave absorber" effectiveness in the Great Lakes). These projects were nominated by Corps field offices for inclusion in the MCNP program.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

National Dam Safety Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$250,000
Allocation for FY 2004	45,000
Allocation Requested for FY 2005	250,000
Increase of FY 2005 over FY 2004	205,000

AUTHORIZATION: Dam safety legislation PL 92-367 and PL 99-662, and the National Dam Safety Program Act (Section 215 of PL 104-303) and the Dam Safety and Security Act of 2002 (Public Law 107 – 310).

JUSTIFICATION: The *Federal Guidelines for Dam Safety* provides a framework for safe construction, operation, and maintenance of Corps dams. Dams in the United States must be constructed, operated, and maintained in accordance with sound engineering practices to prevent failure and avoid potential loss of life and destruction of property. The National Dam Safety Program (NDSP) was established to enhance national dam safety. These funds support the activities under the NDSP, in the interests of the Corps and the citizens of the Nation. The National Dam Safety Program Act strengthens the NDSP, whose purpose is to reduce risks to life and property from dam failure in the United States. The Act also codified the Interagency Committee of Dam Safety (ICODS) to coordinate the Federal actions under the National Dam Safety Program. The Chief, Engineering and Construction Division, Directorate of Civil Works (USACE, Dam Safety Officer), or his representative, represents the Department of Defense as a member of ICODS. The Corps also provides a representative to the National Dam Safety Review Board for the Secretary of Defense. The National Dam Safety Program Act expanded the scope of previous dam safety legislation and the requirements for ICODS participation with various states to improve dam safety in the United States. Through ICODS, the NDSP provides support in development of federal guidelines for dam safety, promotion of public awareness programs, publications, training materials, and workshops. The Act also provides for archival research that is supported by Federal dam owning agencies through ICODS and the National Performance of Dams Program. The Dam Safety and Security Act of 2002 extended the National Dam Safety Program Act appropriation authorization for another five years.

PROPOSED ACTIVITIES FOR FY 2005: The NDSP account provides effective coordination of dam safety activities across the various regions of the Corps and provides for Corps participation at national dam safety events. The account also provides for District participation on the National Dam Safety Management Team, which advises the Corps Dam Safety Officer on safety of dams policy. The NDSP supports Corps membership and participation in various national and international dams organizations including the Association of State Dam Safety Officials (ASDSO), the US Society on Dams (USSD) and the Dam Safety Interest Group (DSIG). The USSD along with its international counterpart, the International Committee on Large Dams (ICOLD) supports technical knowledge concerning the benefits, engineering, design, and construction of dams. The DSIG is an international group of dam owners involved in research and development of dam engineering. Participation with the DSIG allows the Corps to leverage Civil Works research and development funds. The NDSP account also provides funding for nation wide safety of dams prioritization studies and coordination of the portfolio risk assessments across the nation. The NDSP funds special briefings for Congressional interests on the safety of dams and the coordination of safety of dams with other federal agencies.

ACCOMPLISHMENTS IN PRIOR YEARS: The NDSP account provided Corps presentations at the United States Society of Dams (USSD) conference and the Association of State Dam Safety Officials (ASDSO) during FY03 and FY04. This account also supported the Corps response to the 9-11 events in the safety of dams area. The NDSP program account provided field participation in preparing responses to the recommendations of the Corps Peer Review of the Dam Safety Program. Additional funds provide for continued development of the Dam Safety Program Management Tools (DSPMT) and the Dam Safety Program Performance Measures (DSPPM). Both programs are being developed along with the Interagency Committee on Dam Safety (ICODS) to improve both Federal and State safety of dams programs.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

National Dam Security Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$31,000
Allocation for FY 2004	30,000
Allocation Requested for FY 2005	31,000
Increase of FY 2005 over FY 2004	1,000

AUTHORIZATION: Executive Order 13010 - Critical Infrastructure Protection, and Presidential Decision Directives (PDD) 62 and 63.

JUSTIFICATION: The National infrastructure in the United States, including dams, is a potential target of terrorist threats. Additional security, training, and preparedness are required to guard against terrorist activity and to avoid potential catastrophic loss of life and destruction of property. In recognition of these increasing terrorist threats, the Critical Infrastructure Protection, and Presidential Decision Directives (PDD) 62 and 63 were issued. The Interagency Committee on Dam Safety (ICODS) identified terrorism as a major threat to dams in the United States. Of all the agency members of ICODS, the Department of Defense acting through the Corps has the most unique and in-depth knowledge in the area of antiterrorism program development and execution. This program uses the Army's experience in antiterrorism planning and building design as the basis for developing a program to safeguard Corps dams. Training under this program is designed for dam operators and field managers to improve their awareness of potential threats and to establish lines of communications to minimize damage if and when a threat occurs. The program will provides for exchanging information on threats received and the establishment of a database to review trends in the pattern of threats. Through coordination with ICODS and the Interagency Forum on Infrastructure Protection (IFIP), this program will assist in the development of interagency guidance related to the security of dams and appurtenances.

PROPOSED ACTIVITIES FOR FY 2005: The National Dam Security Program provides development and coordination of security systems for Corps infrastructure. The major element of this program is the Risk Analysis Methodology for Dams (RAM-D) program that provides the framework for the analysis of security risks at USACE dams and other infrastructure facilities. During FY05, the program will develop guidance for the periodic reevaluation of facilities. Providing periodic updates to security plans assists in the maintenance of dams and the environmental features associated with dams. The program also provides for training field personnel in the use of RAM-D when evaluating the status of current measures and supports developing security of dams training programs. The additional funding in FY 05 is to conduct training for field managers using the Interagency Forum on Infrastructure Protection (IFIP) security assessment methodology; for conducting/reviewing a random sample of dam assessments; and to continue the development of the IFIP methodology for use by both USACE personnel and private dam owners. Future work will include the development of a periodic program for reassessing the security of dams to be coupled with other periodic inspections of Corps owned and operated dams.

ACCOMPLISHMENTS IN PRIOR YEARS: After the national 9-11 events, the National Security of Dams Program oversaw the completion of some 350 RAM-D evaluations of Corps dams. It provided assistance to various state dam regulators in developing state programs. The program developed a RAM-D training course in conjunction with the Huntsville training center and tested the course with a class of students from various Federal and state agencies. The program also provided initial funds for the centers of protective design and electronic design to start the development of Civil Works related programs. In addition a centralized classified depository for completed RAM-D assessments was established.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

National Emergency Preparedness Program (NEPP)

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$5,000,000
Allocation for FY 2004	6,000,000
Allocation Requested for FY 2005	5,000,000
Decrease of FY 2005 from FY 2004	1,000,000

AUTHORIZATION: Executive Orders 10480 and 12656 which cite several acts including PL 93-288, the basis for the Federal Response Plan.

JUSTIFICATION: The budget request will enable the Corps to be prepared to accomplish its continuity of operations and continuity of government responsibilities during national/regional crises. This entails support of civil government through coordinated execution of federal agency plans and the planning/conducting of limited exercises to test readiness to provide such support. Executive Orders 10480 and 12656 and the Federal Emergency Management Agency (FEMA) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 USC 5121 et seq. are the basis of the Federal Response Plan. The cited executive directives assign significant responsibilities for such preparation (planning, training, research and testing) to the Corps. This includes responsibility for development of comprehensive national level preparedness plans and guidance for response to all regional/national emergencies, whether caused by natural phenomena or acts of man, plans for response(s) to acts of terrorism, and the local preparedness necessary to support Corps continuity of operations. The Corps provides engineering and construction support to state and local governments in response to catastrophic natural/technological disasters. Rapid response to disasters of a regional/national magnitude requires that extensive pre-emergency planning and preparedness activities be conducted to assure the availability of a work force capable of shifting from routine missions to crisis operations and the organizational command and control structure(s) necessary to provide a coordinated and comprehensive response in the critical early stages of a catastrophic disaster.

This program provides the activities necessary to prepare for response to catastrophic natural and technological disasters requiring major Federal support of state and local governments overwhelmed by a disaster event, and for national level emergency water planning. The preparation requires the development of plans, training of employees, conducting of training exercises, including support to Federal Emergency Management Agency (FEMA) exercises, and coordination within DOD and with other Federal agencies and state and local governments. Unlike the Corps Civil Works programs related to individual project planning, development and operations and maintenance, the NEPP requires the development of an integrated command planning and response capability. Corps divisions have a key role in the planning, coordination and operational control of multi-district response(s) and the integrated preparedness effort required for accomplishing this response. Preparation also includes the Headquarters sponsored Corps-wide programs necessary to provide the capabilities and operational command and control required by Corps field commands in order to accomplish their NEPP responsibilities, both routinely and in specific emergency response situations. NEPP also provides USACE with the ability to engage and coordinate readiness with other agencies at the National level on programs of Federal primacy or interests.

The NEPP is complementary to the Flood Control and Coastal Emergencies (FCCE) appropriation. Although both programs are related to emergency situations, there is a distinct separation of responsibilities. The NEPP provides for the planning, training, and testing activities necessary to develop the capability to meet essential requirements associated with local continuity of operations and response(s) to scenario specific national/regional crises. The FCCE, on the other hand, provides preparedness and response related to emergency flood fighting, post-flood repair and restoration of flood and shore protection works damaged or destroyed by floods, hurricanes or wave action and Corps preparedness associated with Federal Response Plan mission requirements.

PROPOSED ACTIVITIES FOR FY 2005: The FY 2005 program will provide for continuing the implementation of the National Emergency Preparedness Program. The FY 2005 program will continue the process of catastrophic disaster planning and exercising to enable the Corps to rapidly respond to a broad spectrum of

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

emergencies, with emphasis on natural disaster and terrorists events that have regional and national implications. An effort will be made to satisfy increasing demands on the program to support multi-agency (Federal, state, and local government) requests to exercise plans focusing on regional catastrophic natural and man made disasters. Increasingly, Federal, state and local agencies are looking to the Corps to take the lead in this area. Lessons learned from events such as Hurricane Isabel, the National Capitol Region workshop, the Alaskan Hurricane CPX and the evolving New Madrid earthquake scenario, clearly indicate that the current system does not adequately provide for a response to catastrophic disasters that is sufficiently timely or comprehensive. The Corps has initiated a program that uses the deliberate planning process to develop scenario specific catastrophic disaster plans. This will result in more detailed planning and should provide for a more comprehensive response to national/regional catastrophic disasters to include terrorist attacks. More extensive coordination with Federal, state and local entities will be incorporated into plan development. In this regard, following FEMA's program focus, USACE will continue to play a key role in national security planning such as supporting Homeland Security strategic planning efforts, development of the National Capitol Region Response Plan and other plans as the New Madrid Earthquake, the South Florida Hurricane, the Southern California Earthquake, the New Orleans Hurricane and other contingencies with national implications. Additional efforts will focus on continuing to strengthen COOP readiness and conducting exercises within the scope of available funding during FY 2005.

ACCOMPLISHMENTS IN PRIOR YEARS: An exercise during FY 01 was the USACE South Pacific Division Earthquake Readiness Workshop held in December 2000. Set against a backdrop of a catastrophic earthquake event occurring in southern California, federal, state and local government agency representatives worked closely with non-government organizations and industry representatives to work towards successfully simulate managing both the acute and long-term effects of the disaster posed by the scenario. The focus of the workshop was on elements related to Emergency Support Function #3 - Public Works and Engineering, of the Federal Response Plan. Following this exercise was the Southwestern Division Regional Hurricane Readiness Workshop in July 2001. This was also a significant exercise involving a Category 4 Hurricane making landfall in Galveston, Texas. This workshop strengthened partnerships and promoted mutual understanding of the roles, responsibilities, and interests of USACE, FEMA, other Federal agencies, and State and local governments involved in hurricane response. It provided an excellent opportunity to examine contingency plans, capabilities, and communications at federal, state and local levels. Region-specific issues were also identified and addressed. Additionally, the USACE Cascadia Sub-duction Earthquake Regional Readiness Workshop, involving a significant earthquake in the northwestern region of the US, was conducted in July 2002. This exercise, supported by the FEMA leadership, was also very successful and served to strengthen partnerships, and promote mutual understanding of the roles, responsibilities, and interests of USACE, FEMA, other Federal agencies, State and local governments and industry representatives. In November 2003, a U.S. Army Corps of Engineers Regional Response Workshop was held in Anchorage Alaska. This workshop served to validate the Anchorage Earthquake Catastrophic Disaster Response Plan (CDRP), serve as a means of addressing the unique requirements of a CDRP occurring in an extremely harsh environment, and to set the stage and planning for a related Command Post Exercise (CPX). Finally, a North Atlantic Division Weapons of Mass Destruction Regional Readiness Workshop was conducted in the Washington DC area in April 2003. This workshop served to provide an understanding of U.S. Army Corps of Engineers (USACE) roles and responsibilities under the Federal Response Plan, particularly by examining the evolving USACE and ESF #3 role in relation to the department of Homeland Security and the National Capitol Region Weapons of Mass Destruction Incident Contingency Plan.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

National Lewis and Clark Commemoration Coordinator

SUMMARIZED FINANCIAL DATA:

Estimated Total (FY 2002-2008) Program Cost	\$2,762,000
Allocation for FY2004	310,000
Allocation Requested for FY 2005	319,000
Increase of FY 2005 over FY 2004	9,000
Balance to complete after FY 2005	1,100,000

AUTHORIZATION: The 2002 and 2003 Energy and Water Appropriations acts.

JUSTIFICATION: The bicentennial commemoration of the Lewis and Clark Expedition is a significant nationwide event, which will begin in 2003 and continue through 2006. It is imperative that activities regarding this event at all levels of the Corps be coordinated. A National Bicentennial Council has been established; Federal, state, Tribe, and local governmental entities are planning the roles they will play in the commemoration. Political interest has also increased rapidly. Of the more than 5,000 miles of trail from Washington D.C. to the Pacific Ocean, the Corps directly or indirectly manages nearly 4,700 river miles, thus managing more of the trail than any other entity. By virtue of its role as administrator of large stretches of public land along the trail route, and its Army heritage of exploring and mapping of the western United States, the Corps will play a significant leadership role in the observance of the Lewis and Clark Expedition Bicentennial. The nature of this event will involve large numbers of the public traveling through numerous Corps local jurisdictions. FY 2004 is the key period to meet the expected increase in recreational visitation on the lower Ohio River and points west of the Mississippi River with six National Signature Events taking place in FY 2004. These events will require significant participation of local Corps sites, in accordance with expectations of local partners. The Lewis and Clark Coordinator is responsible for ensuring consistent agency-wide information on safety, traversing navigation structures (locks and/or dams), historic facts, and the geographic location of the Expedition's route. The Coordinator is also responsible for a consistent agency position in coordination activities with the large number of states, local communities and tribes planning local events either on or in close proximity to Corps projects. Coordinator is also responsible for continued coordination with the Army, State Governors' Lewis and Clark Committees, and other non-Army Federal agencies.

PROPOSED ACTIVITIES FOR FY 2005:

1. Continue to develop funding sources. Develop partnerships with groups such as Association of the US Army, National Environmental Education Training Foundation, and others. Use Challenge Partnership Program to develop potential partners. Seek out new and different funding sources (National Endowment of the Humanities, etc.) Establish partnerships with cooperative associations. Seek ways to accept corporate donations and other non-traditional types of funding. Seek financial assistance (i.e., grants, donations, etc) to support activities, facilities, and other identified needs.
2. Build partnerships. Maintain contacts with BIA and Tribal government designees. Continue contacts with State Governor's committees. Coordinate proposed Corps/Army efforts with other agencies. Work with state recreation and tourism initiatives to market this opportunity for cultural and heritage tourism. Work with Native Americans to ensure their story is interpreted according to their traditions. Identify tasks that could be co-sponsored or co-produced.
3. Improve facilities and interpretation. Work with private and public organizations to improve public access and recreation infrastructure. Implement actions identified in PMP and other management plans. Provide educational and interpretive opportunities for field and ranger staff. Develop strategy for participation in reenactment activities (i.e., rendezvous, demonstrations, costumed interpretation and festivals.)

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

4. Implement plans for Bicentennial activities. Participate in two Signature Events and several regional events. Continue coordination on 5 Signature Events taking place in FY 2006. Coordinate with commercial entities. Coordinate and implement COE staffing effort for Signature Events. Coordinate volunteer efforts to handle increased visitation during summer recreation season.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Performance Based Budgeting Support Program

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$734,000
Allocation for FY 2004	815,000
Allocation Requested for FY 2005	734,000
Decrease of FY 2005 from FY 2004	81,000

AUTHORIZATION: The Government Performance and Results Act of 1993 (GPRA) and under basic project authority in conjunction with general authorities contained in various laws.

JUSTIFICATION: The President's management agenda and GPRA requires that the Corps implement performance based budgeting for Civil Works Operations and Maintenance, General Program. The Performance Based Budgeting Support Program addresses this requirement by seeking new methods for linking performance to annual budget requests and for analyzing the potential economic impact of budget requests on customers.

1. Civil Works Business Function Information: Provides for the collection of Civil Works project and associated port and waterway facility infrastructure inventories and performance data. This infrastructure data is available for homeland defense. An automated national system supporting the O&M program has been developed to focus the total workforce on results-oriented management and performance-based budgeting. This work includes on-going development of automated processes to collect, process and distribute both national and local performance and output information for all O&M business functions. The continuing production involves program management, infrastructure inventory, maintenance and corporate distribution and analysis. This national system results in the ability of the entire O&M community, using a centrally maintained corporate O&M information system fed by transactional systems at the local through the national level, to recognize, verify and adjust the business processes to align with national goals. The outcome is an improved understanding of the relationship between budgets versus results. This assists in mobilizing the total workforce to focus on results-oriented management and performance based budgeting. Also, these funds provide for the operations and maintenance of the deployed transactional systems such as: hydropower, recreation, environmental compliance and navigation, including data review and corrections. These activities also support the President's management initiatives of "Expanded Electronic Government" and "Budget and Performance Integration".

2. Civil Works Performance Measurements: Improvement of performance measurements to be incorporated into the budget decision-making process and to support the Office of Management & Budget's Performance Assessment Rating Tool (PART) initiative. Efforts focus on the refinement of corporate performance principles and program and project level performance measures that focus on anticipated performance and output at different levels of funding in accordance with the revised finance and accounting cost codes that now align with the five O&M business processes - navigation, hydropower, flood damage reduction, recreation and environmental stewardship. These measurements, at different organizational levels, provide the analytical basis to identify the incremental return on investment in Corps programs at various funding levels and to make adjustments in priorities both at the program and project levels concerning efficiency of facilities or services. Comparison of measurements among projects at all levels helps focus management attention on corrections of program or project deficiencies.

3. Civil Works Business Analysis: This task analyzes data using statistical and other analytical techniques and tools to uncover relationships among budget, expenditures and performance within and between Corps business processes. The relationships and statistics drawn from the data may provide evidence to support an increase in expenditures to improve performance. This task will also develop effective graphics to explain relationships found in the data and allow decision-makers to visualize cause and effect. This task links the data gathering, collection and distribution, and use of data in the decision-making process.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

PROPOSED ACTIVITIES FOR FY 2005: Requested FY 2005 funds will provide support of Civil Works O&M automated information systems and infrastructure data collection. FY 2005 funds will also support development of output-oriented performance measures of the incremental return on investment in Corps Civil Works program areas.

ACCOMPLISHMENTS IN PRIOR YEARS: Fielded centralized recreation, hydropower, environmental compliance and natural resource collection systems and trained users in data entry and access. Expanded the one-stop access for most Civil Works budget performance information for FY 2006 Budget submittal in lieu of separate data calls.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Recreation Management Support Program (RMSP)

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$1,600,000
Allocation for FY 2004	1,545,000
Allocation Requested for FY 2005	1,600,000
Increase of FY 2005 over FY 2004	55,000

AUTHORIZATION: This program is conducted under the general authority of PL 78-534, the Flood Control Act of 1944 (58 Stat. 887).

JUSTIFICATION: The recreation program serves over 375 million recreation visitors and generates over \$34 million in revenue annually. Visitors spend over \$12 billion annually to engage in recreation at Corps projects; over 500,000 full and part time jobs are associated with this spending.

The FY 2005 budget includes a recreation modernization initiative to better meet the expectations of recreation users. The initiative includes a legislative proposal for the Corps of Engineers to participate in the Recreation Demonstration Program, collect additional recreation fees, use those revenues in part to upgrade Corps recreation facilities and retain lease revenues not paid to the states. In addition, the agency will undertake six recreation management demonstration projects. Finally \$6 million will be used to modernize facilities for the Lewis and Clark commemoration. The latter activities are funded within the amounts included in the budget for the individual Civil Works projects.

The RMSP supports the recreation program through the conduct of focused management studies to improve operational efficiencies and the provision of technical assistance, to include technology transfer and technology support and maintenance for recreation specific automated information systems. The RMSP supports strategic planning for and performance monitoring of the Corps recreation business program, subject to the Government Performance and Results Act (GPRA).

The RMSP has 3 major components, which together provide comprehensive support to the Corps Recreation Business Function:

1. **Focused Management Studies.** RMSP provides focused management studies and reports to acquire and analyze information about recreation trends, accessibility, emerging issues, user conflicts, visitor diversity, use fee impacts and similar elements affecting the Corps recreation program. Analyses to assist in conducting the recreation area modernization program, implementing facility and service standards, and in similar product delivery improvement efforts. Information and technology transfer pursuant to these studies is funded by the RMSP.
2. **Management/Technical Assistance.** RMSP provides technical assistance to the Recreation Community of Practice in the development of management tools, which quantify recreation program outputs and relate them to customer needs and budget allocations for the purpose of measuring performance. This includes gathering and analyzing information about customer satisfaction with the Corps recreation program. RMSP assures the field workforce is equipped with "state-of-the-art" skills and knowledge to deal with a rapidly changing public. RMSP provides technical support and maintenance for visitation collection and analysis, fee collection and reporting, economic analysis, inventory, and similar automated information programs. RMSP provides short-term assistance to projects in solving specific technical problems.
3. **Support to Recreation Program Strategic Planning.** Funding to support the activities of the Recreation Leadership Advisory Team (RLAT). The Team is composed of representatives from the division, district and project levels of the Corps natural resources management program. It provides input, advice and support to the Corps strategic planning for the recreation business program.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

PROPOSED ACTIVITIES FOR FY 2005: Tools will be developed to provide staff with the capability to monitor and report Recreation performance measures and evaluate and prioritize budget submissions in response to OMB guidance. Demonstrations will be conducted to identify and quantify the benefits of the Corps recreation program and improve effectiveness in addressing the needs of ethnic minority visitors. Emphasis will be placed on improving communications strategies with non-English speaking visitors. Studies will begin to improve recreation use monitoring procedures that take advantage of existing information resources to increase reliability while reducing level of effort. Technical support will be provided to field staff to implement improved procedures. Analysis of carrying capacity studies will be conducted and guidance regarding monitoring and addressing water based carrying capacity will be provided to the field. The

Natural Resources Management Gateway will be transformed into a fully functional Knowledge Management (KM) tool to improve ease of use and effectiveness, compatible with other Corps KM and Community of Practice initiatives. Gateway development will integrate best practices and trip planning information to improve customer satisfaction, respond to Administration initiatives such as Healthier US, and address other GPRA performance measures. Recreation facility and service standards will be fully integrated into appropriate sections of the Gateway. Guidance and appropriate tools will be developed to improve interpretive services associated with the CE recreation program that advance the public's understanding of the environment and the Corps Environmental Operating Principles. Support will be provided to refine the recreation business program strategic plan, utilizing input from the RLAT and stakeholders. Goals and objectives will be refined, and actions will be identified to achieve them. Innovative partnership approaches will be developed and field guidance prepared to improve stakeholder participation. Stakeholder outreach will be conducted to develop partnerships for strategic initiatives.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Regional Sediment Mngt Demonstration Program

SUMMARIZED FINANCIAL DATA:

Estimated Total Program Cost	\$15,000,000
Allocation for FY 2004	1,795,000
Allocation Requested for FY 2005	1,391,000
Decrease of FY 2005 from FY 2004	404,000

AUTHORIZATION: Regional Sediment Management (RSM) studies are authorized by Section 516 of WRDA 96.

JUSTIFICATION: The Demonstration Program goals are to link the management of authorized Corps projects with one another, leverage data collection and shoreline management activities with other Federal agencies, State and local governments, within the limits of a regional watershed system (including uplands, rivers, estuaries and bays, and the coast). The purpose is to demonstrate short and long term cost savings and increased economic and environmental benefits of maintaining sediments within their regional system and using sediments to sustain a balanced environment.

PROPOSED ACTIVITIES FOR FY 2005: Using the "RSM" Primer published in FY04, conduct regional workshops for Corps personnel and partners giving guidance for Regional Sediment Management and its implementation. Complete "Summary and Lessons Learned" reports for RSM demonstrations at Northeast Florida, New York, southeast shore of Lake Michigan, and southern California. Continue to implement RSM concepts at Division/Management Support Command level.

ACCOMPLISHMENTS IN PRIOR YEARS: Mobile District (SAM) completed their 3-year RSM demonstration projects with an estimated cost savings of \$9.4 million. A demonstration at East Pass was completed in FY 2002 with collaboration with the United States Air Force, and a demonstration at Perdido Pass was completed in FY 2003. Both sites are being monitored to determine benefits to the region. The cooperation among Federal agencies and the collaboration among the three levels of government have been the greatest accomplishments to date. Because of the RSM demonstration project data and model results, SAM was able to propose a feasibility study that reduced the study time period from six to three years, and the cost by \$2 million. SAM completed three Technical Notes giving other Districts guidance for regional sediment management. Demonstration Projects are underway in northeast, central, and southwest Florida, New Jersey, New York, the southeast coast of Lake Michigan, north-central Texas, southern California, the Mouth of the Columbia River, and the Upper Columbia River. The New Jersey and New York projects featured collaboration with the US Geological Survey, the Minerals Management Service, the National Ocean Service, and the National Environmental Satellite Data and Information Service in mapping and managing offshore sediment resources as well as nearshore processes. The Lake Michigan project features close coordination and cooperation with the Corps regulatory program and the states of Michigan and Indiana. The southern California project links the efforts of the state and numerous beach communities from Dana Point to Del Mar. The northeastern Florida project links several navigation projects with shore protection projects in conserving sand. The Upper Columbia River demonstration is a team effort with the Yakima Native Americans to propose a plan for regional use of dredged material that is being reviewed by State and Federal Fish and Wildlife agencies. In FY03, all demonstration Districts had a workshop with representatives from the Coastal States Organization to discuss future coordination and opportunities for regional sediment management.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Reliability Models Program For Major Rehabilitation

SUMMARIZED FINANCIAL DATA:

Estimated annual Cost for Continuing Program	\$608,000
Allocation for FY 2004	675,000
Allocation Requested for FY 2005	608,000
Decrease of FY 2005 from FY 2004	67,000

JUSTIFICATION: The purpose of this program is to respond to yearly needs of Districts and Divisions that are preparing Major Rehabilitation reports for the upcoming fiscal year. The objective of the program is to provide reliability models for project features or components that are being considered for Major Rehabilitation, or to provide procedures to consider the impact of various chemical, environmental or physical processes in a reliability analysis.

PROPOSED ACTIVITIES FOR FY 2005: The requested funds will be used to prepare reliability models and collect data for reliability analyses anticipated to be required by several Districts. Reliability models and/or data are anticipated to be needed for the following: Completion of a reliability model for seepage through embankment dams and levees will continue; Completion of a screening level tool for the districts to use to prioritize major rehabilitation and dam safety projects; Evaluation of data collected on performance of dam gates, to determine performance modes and verify load cycles used in reliability analyses, and electrical/mechanical systems model for locks and dams. Provide reliability analysis procedures for selected hydropower equipment. It is also anticipated that two rehabilitation workshops would be conducted. The makeup of these units is subject to the needs of the respective Districts and Divisions.

ACCOMPLISHMENTS IN PRIOR YEARS: Reliability models and other analytical tools have been provided in support of Major Rehabilitation reports on numerous navigation and hydropower projects. In addition, 18 rehabilitation workshops have been conducted in the last 10 years to provide assistance to the Districts as they prepare their reports. These workshops offer guidance in conducting reliability and risk analyses, and provide the opportunity for interdisciplinary teams from the Districts to discuss their particular project with HQUSACE and other Districts personnel.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Water Operations Technical Support (WOTS)

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$653,000
Allocation for FY 2004	725,000
Allocation Requested for FY 2005	653,000
Decrease of FY 2005 from FY 2004	72,000

AUTHORIZATION: These efforts are necessary to provide support for management of Federal water resource projects.

JUSTIFICATION: Maintaining the environmental and water management conditions at 562 reservoirs (5,500,000 surface acres), 237 navigation locks, 926 harbors, 75 hydropower projects, and 25,000 miles of inland and coastal waterways impacted by the operation of Corps projects requires compliance with numerous statutes and state standards. Providing the technology and knowledge base necessary to address the general non-project specific environmental and water management needs of project operations can best be accomplished through a comprehensive centralized program that will maximize cost effectiveness, and ensure broad dissemination and implementation of technology and information.

PROPOSED ACTIVITIES FOR FY 2005: The WOTS Program is expanding as deteriorating water resources infrastructure continues to impact operations and water management. The program will provide effective environmental and water management engineering technology to address a wide range of issues at Corps reservoir and waterway projects, and in river systems affected by project operations nationwide. The program will provide technology to address: tailwater fisheries concerns at pump-back hydropower projects; water management impacts of landuse, sediment and nutrient loadings, erosion, and reservoir sedimentation; and project operations related to environmental and water management issues.

WOTS will provide technical support to the Corps' mission related-project responsibilities, with special emphasis on the transfer of technology. The program will ensure that the technologies developed by the Corps and other Federal agencies are current and readily available to all Corps field offices. The effective use of technologies will be secured through field demonstrations (which are anticipated to expand significantly in FY 2005 in the context of comprehensive water resource management on basin scales), specialty workshops, publication of information bulletins, technical notes, executive notes, technical reports, miscellaneous papers, instruction manuals, videos, meetings, seminars, briefings at field offices, congressional testimony, and the Internet.

ACCOMPLISHMENTS IN PRIOR YEARS: Since its inception in FY 1985, WOTS has provided environmental and water management technological solutions to over 1,400 problems identified at projects from every Corps District. The program annually publishes and distributes numerous copies of manuals, bulletins, notes, and reports. WOTS annually conducts specialty workshops, training personnel on the latest environmental and water management techniques. In FY 2004, the WOTS program successfully responded to 50 direct technical assistance requests from 31 Corps Districts, conducted 5 technology demonstration efforts to verify management strategies and techniques, conducted 7 training workshops on environmental and water management techniques, and prepared 12 technical publications for distribution to the field. A continual endeavor of the WOTS program is coordination with water management and environmental elements of other Federal agencies such as the Environmental Protection Agency, Tennessee Valley Authority, Bureau of Reclamation, Fish and Wildlife Service, U.S. Geological Survey, and the Bonneville Power Administration. These efforts have involved watershed management activities, problems related to the spread of Zebra Mussels, problems related to the introduction of non-indigenous aquatic plants, environmental impacts of hydropower facilities, and impacts of water releases in tailwater areas on fisheries.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2005

Long-Term Options for Small Ports and Harbors

SUMMARIZED FINANCIAL DATA:

Allocation for FY 2004	\$0
Allocation Requested for FY 2005	0

AUTHORIZATION: Section 216, Rivers and Harbor Act of 1970, PL 91-611, 84 Stat. 1830

JUSTIFICATION: The FY 2005 Budget targets funds to those ports and harbors that provide the highest net economic return to the Nation relative to their cost. For small ports and recreational harbors, the Budget funds maintenance work where needed to support significant commercial navigation, commercial or subsistence fishing, or public transportation benefits.

As in the past, the Corps has measured the economic return associated with a navigation project by the amount of commercial traffic. Using this measure means there is relatively little funding that goes to small ports and recreational harbors. Basing economic return on the level of commercial traffic is a good, but not perfect, measure of national interest. In some cases small ports and recreational harbors can provide a vital economic engine to local economies, especially in less populated areas. However, as of yet, there is no objective means of determining how best to weigh their needs against those of the ports and harbors with more commercial traffic.

The FY 2004 Budget proposed a study that would have explored issue related to benefits provided by small ports and harbors, but funding was not provided in the FY 2004 appropriation. The Administration is prepared to work with the Congress to address this concern.

APPROPRIATION TITLE: Regulatory Program, FY 2005

AUTHORIZATION: Rivers and Harbors Act of 1899, Sections 9, 10 and 13
Clean Water Act, Section 404
Marine Protection, Research and Sanctuaries Act, Section 103

SUMMARIZED FINANCIAL DATA:

Budget Request for Fiscal Year 2005	\$150,000,000
Budget Request for Fiscal Year 2004	\$139,174,000
Increase in FY 2005 over FY 2004	\$10,826,000

JUSTIFICATION:

~~Background.~~ The Corps of Engineers has been regulating certain activities in the Nation's waters since 1890. Most of the authority for administering the program has been delegated to the district and division commanders. National public awareness of the aquatic environment, including wetlands, and the involvement of state and Federal resource agencies continue to grow. Sensitivity to wetlands has resulted in greater direct input from the public as well as support for environmental interest groups, resulting in greater scrutiny and controversy in the review of permit proposals. While this tends to add time to the permit review process, it insures more balance in the overall review. Interagency cooperation in the management and protection of the nation's wetlands has greatly improved over the last ten years, resulting in improved the efficiency and effectiveness of the Corps Regulatory program. Some changes have enhanced efficiency, allowing the Corps to respond more quickly to permit applicants, while others have improved its ability to ensure protection of the aquatic environment. Since 2002, the Corps has cooperated with the other agencies in the National Wetlands Mitigation Action Plan, designed to improve all aspects of mitigation managed by the program. The general permit program is designed to reduce Federal regulation of activities with only minimal adverse impacts on the aquatic environment and to eliminate duplication of effort with state and local governments. The Corps works with state, tribal, and local governments to develop mechanisms that give them greater responsibility for aquatic resources including wetland regulation. This is achieved primarily through programmatic and regional general permits but also includes joint permit applications and processing procedures as well as work-sharing agreements. Programmatic permits are becoming an increasingly effective mechanism for giving states a greater role in administering minor permit actions over large areas, thus freeing up Corps resources for more complex permit actions. States may assume Section 404 authority (in non-navigable waters) where the state or local regulatory program is able to implement appropriate regulatory controls. Since 1984, only Michigan and New Jersey have chosen to assume this aspect of the program.

Types of Activities Regulated by the Corps.

- a. Construction and other work in waters of the United States including wetlands;
- b. Construction of fixed structures and artificial islands on the outer continental shelf;
- c. Discharges of dredged or fill material, including those associated with construction and land-clearing activities, into the waters of the United States including wetlands;
- d. The transportation of dredged material for the purpose of disposal in ocean waters.

APPROPRIATION TITLE: Regulatory Program, FY 2005 (continued)

~~Evaluation Criteria.~~ The decision whether to issue a permit is based on an evaluation of the probable impacts of proposed activities on the public interest. In order to issue a permit, district commanders must determine that activities are not contrary to the aquatic environment. In addition, for Section 404 permits, the Corps must determine compliance with the Clean Water Act, Section 404 (b)(1) guidelines.

ACCOMPLISHMENTS: In FY 03, the Corps authorized almost 86,000 activities in writing, a 3,000 increase over FY 02, and completed 74,000 jurisdiction determinations, an all-time high. Of the 86,000 permits, 92 percent were authorized by regional and nationwide general permits and the remaining 8 percent by individual permits. The Corps continues to depend on its nationwide permit program to help manage its regulatory workload. Without regional and nationwide general permits, all activities would have to be intensively evaluated as individual permits. Although the evaluation process for an individual permit is typically greater than that for a general permit, most regional and nationwide authorizations now involve substantive evaluation and determination of necessary mitigation.

Following announcement in December of 2002 of a multi-agency Mitigation Action Plan, the Corps and other Federal wetland agencies began work to implement a national wetlands mitigation plan to improve the ecological performance and results of compensatory mitigation under the Clean Water Act and related programs. This plan emphasizes watershed approaches and use of wetlands functions and values in determining impacts and mitigation. The plan is a five-year comprehensive effort to improve compensatory mitigation. In FY 03, guidance for compensatory mitigation in off-site, in-kind situations was drafted, as well as performance standards to measure mitigation, and guidance on standards for a mitigation checklist for applicants.

The Corps continues to protect the nation's aquatic environment, while working to provide fair and equitable decisions in a reasonable period of time. Because of a nearly 50-percent increase in the total number of written permit authorizations over the last ten years as well as increasing program review requirements and legal challenges, the Corps has not been able to maintain its evaluation time for the more complex permit actions. In FY 03, 88% of all actions were authorized in less than 60 days, the same level of performance as in FY 02, but down from 94% in FY 98. Performance in evaluating the more complex project requiring standard permits, however, has continued to decline. With nationwide and regional general permits authorizing most actions, only the most difficult permits are left to be handled through standard permits. In FY 03, 56% of standard individual permits were completed within 4 months, compared to 61% in FY 02 and 80% in FY 98. Standard permits represent only about 8% of all permits in numbers but utilize about a third of all Corps man-days expended on permit actions. The environmental review of all standard permits is extensive, but where projects are large and have significant impacts on the aquatic environment, stricter laws and policies on endangered species, historic resources, and mitigation make these applications extremely difficult. The impact of these problems increases each year as the less environmentally sensitive areas are developed and developers are forced to consider building in or near higher value aquatic areas, including wetlands. Because of these reasons, more permit decisions, whether issued or denied, are resulting in litigation. The potential for litigation increases the need for more-in-depth review and documentation on complex permits.

Uncertainty about the program's jurisdiction following a 2001 Supreme Court decision on non-navigable, intrastate, isolated waters has not been resolved. The General Accounting Office is currently conducting a study of this issue.

APPROPRIATION TITLE: Regulatory Program, FY 2005 (continued)

~~FISCAL YEAR 2005:~~ The request of \$150 million is \$10.8 million over the amount appropriated for FY 04. This funding will allow continuation of efforts to be more responsive to the regulated public while continuing to ensure the protection of the aquatic environment as required by law. The funding amount allows progress toward the goal of reducing time to evaluate standard permits. Additional funds will be allocated for inspections of permitted activities to improve compliance of permitted projects and to insure mitigation oversight; the Corps has been criticized by the National Academy of Sciences for inadequate compliance. Compliance is being tracked separately from enforcement starting in FY 04 to better track efforts to improve compliance. In addition, this change to improve the management of compliance is part of an overall initiative to demonstrate program improvements through new performance standards developed in cooperation with the Office of Management and Budget using the Program Assessment Rating Tool.

In FY 05, The Corps and the other federal agencies will complete most of the work under the Mitigation Action Plan, including preservation guidance, guidance for mandating buffer zones for wetlands, and guidance on "Difficult to Replace" wetlands. A major part of this effort is studies to look at impact analysis and mitigation from a holistic watershed approach. Study efforts will continue to develop watershed approaches that can consider impacts in entire aquatic ecosystems to help expedite permit actions and manage aquatic resources in sensitive areas. Where these watershed studies and evaluations of the impacts of future permits in an aquatic system are undertaken, permit evaluation workload can be greatly reduced. The Regulatory program is currently developing a comprehensive watershed management plan to assist with permit processing. The watershed plan is designed to allow the agency to work cooperatively with other federal agencies, state and local governments, regional and local nongovernmental organizations, private property owners and other stakeholders to ensure sound use of watershed aquatic resources. In addition, in FY 05 the Corps will implement new cultural resource regulations, to clarify and expedite the handling of historic properties affected by permit proposals.

Other program management efforts will continue, including specialized training of Corps personnel and technical assistance to Corps districts by the Engineer Research and Development Center (ERDC). Generally, from \$500,000 to \$1,000,000 is allocated to ERDC each year for its technical assistance with complex and sensitive permit cases. ERDC is also producing a series of regional wetland delineation manuals that will improve decision-making and consistency in wetland delineations by taking into account regional variations in wetlands. In addition, a similar funding amount may be allocated to the Institute for Water Resources to address special program management issues such as studies of mitigation banking, improvement of data systems to track program workload and wetland acreage, and assessment of impacts due to program changes. By the end of FY 05, the program will implement a greatly improved data system for tracking workload and measuring success at protecting the environment as well as tracking program performance. Funds also will be used to pay for the review of environmental impact statements (EIS's); some districts are now dealing with unusually large and controversial projects requiring EIS's. Examples of some projects are ports in Galveston and Charleston, "windfarms" in New England, mountaintop mining in the Appalachian area, and programmatic EIS's in south Florida.

The \$150 million will be applied as follows:

Permit Evaluation	\$ 122,000,000
Enforcement & Resolution	\$ 12,000,000
Administrative Appeals	\$ 2,000,000
Studies and Wetlands Technical Support	\$ 3,000,000
Environmental Impact Statements	\$ 1,000,000
Compliance for Authorized Activities & Mitigation	\$ 10,000,000
TOTAL	\$ 150,000,000

APPROPRIATION TITLE: Flood Control and Coastal Emergencies (FCCE), FY 2005

SUMMARIZED FINANCIAL DATA:

Annual Appropriation FY 2003	\$14,909,000
Emergency Supplemental FY2003	\$60,000,000
Annual Appropriation FY 2004	— 0
Budget for FY 2005	<u>—</u> \$50,000,000

DISASTER PREPAREDNESS AND EMERGENCY RESPONSE: The U.S. Army Corps of Engineers plays an important role in support of the Federal response to natural disasters throughout the United States. In that regard, the Corps must maintain a preparedness program that ensures the agency is ready to respond to the needs of the Nation. The prudent management of FCCE funds ensures that mobilizing people and materials, obtaining contractor support, and coordinating with other agencies involved in emergency events are accomplished on an expedient, “24/7” immediate response basis. This response can be under Corps authorities, such as P.L. 84-99, 33 USC 701n, Flood Control and Coastal Emergencies, or in support of other agencies, particularly the Federal Emergency Management Agency (FEMA) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 USC 5121 et seq. Activities under P.L. 84-99 authority include the following: preparedness activities; emergency operations (flood response and post-flood response); emergency repair and restoration of flood control works which are threatened, damaged or destroyed by flood; emergency protection of existing Federal hurricane and shore protection works; the repair or restoration of Federal hurricane or shore protective structures damaged or destroyed by wind, wave or water action of other than ordinary nature; preventive work performed prior to unusual flooding that poses a threat to life or property; providing emergency supplies of clean water following a natural disaster where a source of contaminated water is causing or likely to cause a substantial threat to public health and welfare; and provision of water supplies to drought-distressed areas by reimbursable well drilling or transportation of water at Federal cost.

Included in the funds for these emergency activities are overtime pay for Headquarters staff, travel to support disaster response and recovery operations, supplies and materials, increased staff support from field activities, and Remote Sensing/Geographic Information System (RS/GIS) services to support field operations. In the event that the response to a recovery from emergency depletes FCCE funds, the Secretary of the Army is authorized to transfer funds from other appropriations temporarily, to finance additional response and recovery costs pending additional FCCE appropriations.

APPROPRIATION TITLE: Flood Control and Coastal Emergencies (FCCE), FY 2005 (continued)

ACCOMPLISHMENTS: The Corps of Engineers has successfully prepared for and responded to a wide array of significant natural disasters. Major disaster response efforts were successfully completed for flood events in California, Washington, West Virginia, Virginia, Indiana, Ohio and Puerto Rico; California wildfires; Hurricane Isabel in North Carolina, Virginia, District of Columbia and Maryland; and tornadoes in Missouri, Illinois and Tennessee. Recovery activities for rehabilitation of damaged flood control works are continuing at various locations throughout the continental United States. Other initiatives such as the concept for advance contracting make the Corps more responsive and efficient in disaster related work. Development and maintenance of these and other capabilities are critical to continued success.

Major preparedness efforts include the review and updating of response plans based on lessons learned from recent disasters; training of personnel and teams to develop critical skills which enhance the capability to respond under adverse conditions; procurement and prepositioning of critical supplies and equipment (i.e., sandbags, pumps) which likely would be otherwise unavailable during the initial response stages; periodic exercises to test and evaluate plans, personnel, and training; inspection of non-Federal flood control projects to ensure their viability to provide flood protection and assess their eligibility for post-flood rehabilitation; laboratory support for field operations; liaison with state and local governments and agencies; and effective management to ensure workable, coordinated efforts that will meet the needs of disaster victims. The funding identified under All-Natural Hazards Preparedness Activities reflects expanded national and regional planning, training and coordination to support Federal response to all natural disasters that includes disasters under the umbrella of the Federal Response Plan.

FISCAL YEAR 2005: The Budget funds this program at \$50 million. The FY04 appropriation was zeroed out, since a \$60M supplemental was received at the end of FY03. FY 05 funding is needed to maintain program performance, to reduce the risk of disrupting other Corps programs when the Corps responds to emergencies, and to reduce reliance on supplemental funding. The decision to seek this increase is an outcome of an analysis using the Program Analysis Rating Tool (PART). The \$50,000,000 requested for FY 05 will provide for the following activities:

Disaster Preparedness	\$ 25,000,000
Emergency Operations	\$ 13,000,000
Rehabilitations and Levee Inspections	\$ 9,000,000
Emergency Water and Drought	\$ — 0
Advance measures	<u>\$ 3,000,000</u>
Total Preparedness Program, FY 2005	\$ 50,000,000

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005
(\$000)

State Project Name	Allocated through FY 2004	FY 2005 Request	Remaining Requirement*
Connecticut			
CE, Windsor, CT	8,817	250	21,133
Iowa			
Iowa Army Ammunition Plant, Middletown, IA	475	500	TBD
Maryland			
W. R. Grace, Baltimore, MD	10,190	2,000	32,502
Massachusetts			
Shpack Landfill, Norton, MA	5,570	5,000	2,000
Missouri			
Downtown, St. Louis, MO	129,063	10,000	13,679
Latty Avenue, St. Louis, MO	64,032	8,000	78,995
St. Louis Airport Vicinity Properties, St. Louis, MO	39,792	3,500	92,122
St. Louis Airport, St. Louis, MO	227,590	26,500	15,000
New Jersey			
Dupont Chambers Works, Deepwater, NJ	11,825	3,400	10,550
Maywood, NJ	244,068	28,500	200,000
Middlesex, NJ	77,788	2,500	14,308
Wayne, NJ	123,955	200	330
New York			
Ashland 1, Tonawanda, NY	76,197	13,600	16,480
Colonie, NY	160,069	10,350	20,000
Linde Air Products, Tonawanda, NY	138,177	12,750	17,000
Niagara Falls Storage Site, NY	40,757	3,500	309,150
Seaway Industrial Park, Tonawanda, NY	7,945	300	30,000
Ohio			
Former Harshaw Chemical Company, Cleveland, OH	6,945	1,300	35,980
Luckey, OH	14,156	450	134,530
Painesville, OH	9,505	5,000	5,000
Pennsylvania			
Shallow Land Disposal Area, Parks Township, PA	5,930	1,400	TBD
Potential Sites			
	774	1,000	
	1,403,620	140,000	1,048,759

*The remaining requirement, except as indicated on individual justification sheets, is based on cost estimates developed during the spring of 1998 to validate initial Corps estimates in the Report to Congress. As in the case of the estimates in the Report to Congress, these estimates assume acceptance of criteria for remediation which, while fully protective of human health and the environment also strike an appropriate balance among cost, regulatory and community acceptance, and land use considerations. They also assume funds are provided to support the optimal remediation schedules. The actual remaining requirement may range from \$640,000,000 to \$1,290,000,000.

CONNECTICUT

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Combustion Engineering Windsor, CT New England District	29,700,000 – 42,790,000*	8,367,000	450,000	250,000	20,633,000 – 33,723,000

The Combustion Engineering (CE) site is a 600-acre area in Windsor, Connecticut. CE, under contract to the Atomic Energy Commission (AEC), fabricated nuclear fuel assemblies using highly enriched uranium (HEU) from 1958 to 1961. CE also conducted licensed commercial nuclear activity on the site from the early 1960's to 1993. Although the commercial nuclear fuel fabrication ceased in 1993, CE is still licensed by the Nuclear Regulatory Commission (NRC) for other commercial nuclear activities and the facility is still operating today. HEU is the primary radiological contaminant of concern at the site, which may be addressed by Formerly Utilized Sites Remedial Action Program (FUSRAP). Only limited site characterization work had been performed when FUSRAP was transferred from the Department of Energy (DOE) to the Corps for execution. Since then, the Corps has performed a gamma survey of the site, completed site characterization (SI), completed an investigation action at the "Rapaport Building," and is currently preparing a remedial investigation/feasibility study report.

In FY 2004, the Corps completes the remedial investigation/feasibility study, initiates preparation of a Proposed Plan and Record of Decision, and continues potentially responsible party discussions.

FY 2005 funds will be used to finalize a Record of Decision and for project management and Quality Assurance activities associated with Remedial Design/Remedial Action being accomplished by the responsible party.

The schedule for completion of site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from Federal, state and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. Responsible party with Corps oversight may do remedial action.

**The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Mississippi Valley Division

IOWA

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Iowa Army Ammunition Plant Middletown, IA St. Louis District	TBD*	175,000	300,000	500,000	TBD*

The Iowa Army Ammunition Plant (IAAAP) is a secured, operational, Army-owned facility located on approximately 19,100 acres near Burlington in Des Moines County, in southeastern Iowa. During its use as an Army facility, portions of the IAAAP were occupied by tenant organizations including the Atomic Energy Commission. From 1947 to 1975, the Atomic Energy Commission (AEC) operated areas of the plant as the Burlington Atomic Energy Commission Plant (BAECP). In 2002 a Preliminary Assessment was completed for the BAECP. The purpose of the Preliminary Assessment was to collect and review information to determine if a release or threat of release of an AEC-related hazardous substance occurred. The Preliminary Assessment included a review of AEC historical documents, site visits, examination of the results of an indoor radiological survey and performance of a limited radiological walkover survey at two firing site areas. The Preliminary Assessment found evidence of a release and recommended additional investigation to determine the nature and extent of AEC associated contamination. It is believed that approximately 1,600 acres within the IAAAP have been potentially impacted by Atomic Energy Commission (AEC) operations. Limited survey data and existing sampling data (from other Army activities) indicates radiological (primarily depleted uranium), chemical, and explosives contamination exists. Potentially impacted media include soils, groundwater and surface water. The nature and extent of this contamination will be investigated and defined during the Remedial Investigation (RI), which is the next step in the planning process. The primary regulators/stakeholders include the Environmental Protection Agency Region VII, Iowa Department of Public Health, Iowa Army Ammunition Plant (Army) and the IAAAP Restoration Advisory Board. The site was placed on the National Priority List in 1990. In FY 2002, the Corps received designation of the IAAAP into FUSRAP.

In FY 2004, the Corps is negotiating a Federal Facilities Agreement with the primary regulators/stakeholders, and developing the Sampling and Analyses Plan for the Remedial Investigation of the site.

FY 2005 funds will be used for the Remedial Investigation of the Site.

*A preliminary cost estimate for site remediation will be determined at completion of the Remedial Investigation phase.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

North Atlantic Division

MARYLAND

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
W.R. Grace Site Baltimore, MD Baltimore District	41,970,000 – 55,960,000*	9,690,000	500,000	2,000,000	29,780,000 – 43,770,000

The W.R. Grace site is situated within a 260-acre property owned by Grace, located on an industrialized peninsula in south Baltimore. Currently, Grace manufactures and produces specialty chemicals at this facility. Contamination at the site consists of radioactively contaminated slabs and other surfaces impacted by the thorium extraction process in Building 23, which is still used by Grace, and the Radioactive Waste Disposal Area (RWDA) to the east of the plant proper. The Department of Energy (DOE) had conducted radiological surveys at the site; however, no actual characterization or remediation had been performed. To date the Corps has initiated remedial investigations/feasibility studies (RI/FS) at the radioactive waste disposal area (RWDA) and Building 23. and removed previously containerized waste stored in Building 23.

In FY 2004, the Corps is continuing the remedial investigations for the RWDA and completing the proposed plan as well as starting the ROD for Building 23.

FY 2005 funds will be utilized to complete the RI/FS for the RWDA and to finalize the Record of Decision (ROD) for Building 23.

The schedule for completion of site remediation is to be determined.**

* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and on overall funding constraints.

MASSACHUSETTS

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Shpack Landfill Norton/Attleboro, MA New England District	11,000,000-15,000,000*	5,310,000	260,000	5,000,000	430,000-4,430,000

The Shpack site is an 8-acre abandoned domestic and industrial landfill, which operated from 1946 to 1965. It is located along the Norton/Attleboro town boundary line with approximately 5.5 acres in Norton and 2.5 acres in Attleboro. The Town of Norton and Attleboro Landfill, Inc. owns the property. FUSRAP-related radioactive contamination is believed to have come from Metals and Controls, Inc. (now Texas Instruments), which had used the landfill to dispose of trash and other materials from 1957-1965. The General Plate Division of Metals and Controls began to fabricate enriched uranium foils at their Attleboro plant in 1952. In 1959 it merged with Texas Instruments, which continued the operations until 1981, using enriched and natural uranium for the fabrication of nuclear fuel for the U.S. Navy and commercial customers. The site was also listed on the National Priority List (NPL) in 1986, primarily to address other contaminants on site. The Environmental Protection Agency (EPA) has signed an Administrative Order by Consent with a group of Settling Parties (which includes Texas Instruments) for the performance of a remedial investigation/feasibility study (RI/FS). Through Fiscal Year 2003, the Corps has completed a gamma walk-over survey, site characterization, potentially responsible party (PRP) investigations, and coordinated with other responsible parties and EPA, and began drafting an Engineering Evaluation/Cost Analysis (EE/CA).

In FY 2004, the Corps is completing an EE/CA and Action Memorandum and initiating a non-time critical removal action.

FY 2005 funds will be used to substantially complete the removal action. Funds required after FY05 will be used to coordinate with EPA while they complete clean-up of the site under the Superfund Program.

The schedule for completion of the site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from Federal, state and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in an Action Memorandum, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Mississippi Valley Division

MISSOURI

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
St. Louis Downtown Site St. Louis, MO St. Louis District	152,742,000	117,188,000	11,875,000	10,000,000	13,679,000

The St. Louis Downtown Site and vicinity properties are located in St. Louis, Missouri. The site is comprised of an operational chemical manufacturing facility (Mallinckrodt Inc.) and 36 surrounding properties used by a variety of interests for industrial, and commercial purposes. The primary contaminants of concern are radium-226, thorium-230, uranium-238, progeny, metals, and organic compounds. The extent of contamination includes 17 acres where contaminated soils are accessible for remediation (17 buildings, subsurface soil, and vicinity properties). The primary regulators/stakeholders include the U.S. Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. In 1998, a Record of Decision (ROD) for Accessible Soils was signed to allow the removal of approximately 87,000 cubic yards of contaminated soils. In FY 2003, in accordance with the Record of Decision, the Corps completed remediation at Plant 1, Plants 6 East/6 East-Half, Plant 7 East, Midwest Waste (DT-7), and Heintz Steel (DT-6), and initiated the pre-design investigation and design for Plant 6 West, Plant 7 North/South and several other vicinity properties. A total of 9,054 cubic yards of contaminated soils were remediated. The total estimated Federal cost shown above does not reflect possible costs of addressing contamination in inaccessible soils. A Potentially Responsible Party investigation is underway.

In FY 2004, the Corps is completing remedial designs and remediating approximately 5,000 cubic yards from Plant 6 West and two vicinity properties. Additionally, development of the Feasibility Study/Proposed Plan for inaccessible soils will be initiated.

FY 2005 funds will be used to continue development of the Feasibility Study/Proposed Plan for inaccessible soils, complete remedial designs for two vicinity properties, and remediate approximately 10,000 cubic yards from Plant 6 West and two vicinity properties.

The schedule for completion of the site remediation is to be determined.**

** The completion schedule will depend on the recommendation of the Record of Decision for inaccessible soils and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Latty Avenue Properties/Hazelwood Interim Storage Site, Berkeley, MO St. Louis District	135,140,000 – 180,190,000*	62,062,000	1,970,000	8,000,000	63,108,000 – 108,158,000

The Latty Avenue Properties site is comprised of several different tracts of land in North St. Louis County, Missouri. The project includes an 11-acre site, encompassing the Hazelwood Interim Storage Site (HISS) and FUTURA Coatings on Latty Avenue, and the Latty Avenue Vicinity Properties, which are at various nearby locations. The Hazelwood Interim Storage Site and FUTURA Coatings were placed on the National Priority List in 1989. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. Surface and subsurface soils are known to be contaminated at levels, which pose an unacceptable human health risk based on projected future land use scenarios. The primary regulators/stakeholders include the Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. Potentially Responsible Party investigations are ongoing. In FY 2003 the Feasibility Study/Proposed Plan for final cleanup of the area comprising the St. Louis Airport and Vicinity Properties and Latty Avenue sites (North St. Louis County sites) were released for public review and comment.

In FY 2004, the Corps is preparing a Record of Decision for the North St. Louis County sites, which includes Latty Avenue Properties & the Hazelwood Interim Storage Site, and continues characterization and design work for these properties.

FY 2005 funds will be used to complete design work, and remediate approximately 12,000 cubic yards.

The schedule for completion of site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
St. Louis Airport Site, Vicinity Properties, St. Louis, MO St. Louis District	122,700,000 – 163,660,000*	38,137,000	1,655,000	3,500,000	79,408,000 – 120,368,000

The St. Louis Airport Site (SLAPS) Vicinity Properties consists of 78 properties in North St. Louis County, Missouri. The contaminated sites include former ball fields (located directly north of SLAPS), areas along haul roads, and Coldwater Creek. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. Dispersion of radioactive material occurred either through direct migration from SLAPS via air or water, or through vehicular distribution along the roadways. (This is the case for most of the roadway, shoulder, and ditch contamination.) The properties are used for residential, commercial, industrial, recreational and transportation (road easement) purposes. The primary regulators/stakeholders include the Environmental Protection Agency, Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. A Potentially Responsible Party investigation is underway. As of the end of FY 2003, 34 of 78 properties had been completed or substantially completed under an existing Engineering Evaluation/Cost Analysis. Additionally, remedial design was completed for several additional properties; and the draft Feasibility Study/Proposed Plan for the SLAPS Vicinity Properties, together with the Latty Avenue and St. Louis Airport Sites (North St. Louis County sites) were released for public review and comment. Completion of the Vicinity Properties will require the removal of an additional 111,000 cubic yards of contaminated material.

In FY 2004, the Corps completes the characterization of several vicinity properties, and completes the Record of Decision for the North St. Louis County sites (including the Latty Avenue and St. Louis Airport Sites).

FY 2005 funds will be used to perform design work, and remediate approximately 1,000 cubic yards.

The schedule for completion of the site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
St. Louis Airport Site, St. Louis, MO St. Louis District	255,247,000 – 283,540,000*	193,290,000	34,300,000	26,500,000	1,157,000 – 29,450,000

The St. Louis Airport Site (SLAPS) consists of 21.7 acres north of Lambert International Airport in North St. Louis County, Missouri. The site contamination is bordered by McDonnell Boulevard on the north and east, Coldwater Creek on the west, Banshee Road and Norfolk and Western Railway on the south. The ditches immediately adjacent to the north and south of SLAPS are considered part of this location. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. The St. Louis Airport Authority owns the property. The primary regulators/stakeholders include the U.S. Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. A Potentially Responsible Party Investigation is underway. The site was placed on the National Priority List in 1989. In FY 2003, the Corps performed design work, removed approximately 99,750 cubic yards under an Engineering Evaluation/Cost Analysis (EE/CA) and the Feasibility Study/Proposed Plan for final cleanup of the area comprising the St. Louis Airport and Vicinity Properties and Latty Avenue sites (North St. Louis County sites) were released for public review and comment.

In FY 2004, the Corps performs design work, removes approximately 85,000 cubic yards under the Engineering Evaluation/Cost Analysis, and completes the Record of Decision for the North St. Louis County Sites.

FY 2005 funds will be used to remediate approximately 50,000 cubic yards and develop Post Remedial Action Reports documenting work completed at the site.

The schedule for completion of site remediation is to be determined.**

* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

NEW JERSEY

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
DuPont Chambers Works Deepwater, NJ Philadelphia District	22,210,000 – 29,630,000*	9,825,000	2,000,000	3,400,000	6,985,000 – 14,405,000

The DuPont Chambers Works site is a 700-acre active chemical plant located in Pennsville and Carneys Point Townships on the southeastern shore of the Delaware River, north of the I-295 Delaware Memorial Bridge, and adjacent to the residential community of Deepwater, N.J. The plant is owned and operated by E.I. Dupont de Nemours & Company. Operations involving uranium at the Chambers Works site began in 1942. As part of its work on the Manhattan Engineer District (MED) Program, DuPont worked on developing a process for converting uranium oxide to produce uranium tetrafluoride and small quantities of uranium metal. The major contaminant is U-238 found in both soil and water samples. Through FY2003, the Corps continued site characterization and Remedial Investigation / Feasibility Study (RI/FS) activities for soil contamination and investigation of possible groundwater contamination, conducted Technical Project Planning sessions with the stakeholders including the New Jersey Department of Environmental Protection, held Restoration Advisory Board Meetings, conducted extensive coordination with the landowner, and completed work-plans for on-site investigations and completed soil sampling and groundwater well installation for Operable Units (OU) #1 and #2.

In FY 2004, the Corps completes the final RI/FS report and risk assessment, initiates the proposed plan and ROD for OU #1, completes the RI for OU #2, continues soil contamination investigation and analysis of OU #3, and continues possible groundwater contamination investigations.

Requested funds for FY 2005 will be used to prepare a ROD for OU #1, initiate decision documents for OU#2, prepare a draft RI for OU #3, and continue groundwater investigations and analysis on the rest of the site.

The schedule for completion of site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. Current project completion schedules and cost estimates do not include any remedial design or remediation action for potential ground-water contamination.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Maywood Site Maywood, N.J. New York District	450,000,000- 500,000,000*	217,948,000	26,120,000	28,500,000	177,432,000- 227,432,000

The Maywood site is included on the Environmental Protection Agency Superfund National Priorities List. Site consists of 140 acres of residential, commercial and industrial property totaling 88 commercial and residential properties, located 20 miles north of Newark adjacent to Interstate 80 and State Route 17. There are approximately 281,000 cubic yards of subsurface contaminated material containing thorium-232, radium-226, and uranium-238. The United States owns 11.7 acres of the site, which is being used as a staging area during cleanup operations. The Stepan Company occupies part of the site and operates a chemical factory processing a patented product. Sears operates a large central distribution warehouse (leased) on the site. In the mid-1980's, 25 residential vicinity properties were remediated. In 1994 an Engineering Evaluation/Cost Analysis (EE/CA) by the Department of Energy approved a further interim removal action to remediate an additional 39 vicinity properties. As of the end of FY 00, all of the 39 vicinity properties included in the 1994 EE/CA have been remediated, including 23 completed by the Corps (15 in FY 98, 7 in FY99, and 1 in FY00). Additionally, the Corps has completed a Remedial Investigation/Feasibility Study/Proposed Plan (RI/FS/PP) for soils and buildings on the remainder of the site, prepared an EE/CA for an interim removal action involving 10 commercial properties impacted by New Jersey Department of Transportation projects and initiated potentially responsible party (PRP) negotiations through the Department of Justice with the Stepan Company. The Corps has also initiated investigation of potential groundwater contamination. FY 03 funds were used to continue the interim removal action, to complete the Record of Decision (ROD) for the soils and buildings, and to further characterize the site.

In FY04, the Corps completes remedial design under the ROD and initiates remedial action for the remainder of the soils. In addition, the Corps completes the groundwater remedial investigation and initiates the groundwater feasibility study.

Funds requested for FY05 will be used to continue the remedial action under the ROD and to continue development of the groundwater feasibility study.

The schedule for completion of site remediation is to be determined.**

* The total cost will depend upon the specific groundwater cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a groundwater Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the groundwater cleanup standards established for this site and overall funding constraints.

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Middlesex Sampling Plant Middlesex, NJ New York District	84,660,000 – 112,890,000*	75,678,000	2,110,000	2,500,000	4,372,000 – 32,602,000

The Middlesex site is a Federal government-owned site located in Middlesex, NJ. There are also 36 Vicinity Properties (VPs). Primary contaminants are Uranium-232, Radium-226, and Thorium-232. The Manhattan Engineer District (MED) established the Middlesex Sampling Plant (MSP) in 1943 for use in sampling, storage, and shipment of uranium, thorium, and beryllium ores. MED operations ended in 1955, and the Atomic Energy Commission (AEC) later used the site for storage and performed limited sampling of thorium residues. In 1967, the AEC terminated activities at the MSP and decontaminated onsite structures to meet criteria then in effect. From 1969 to 1979, the site served as a US Marine Corps training center. In 1980, the MSP was returned to the Department of Energy (as AEC's successor), which designated it for clean up under FUSRAP. MSP was used for interim storage of two piles of radioactively contaminated soils removed from the vicinity properties (VPs) and from the Middlesex Municipal Landfill (MML). The Middlesex site was added to the Environmental Protection Agency Superfund National Priorities List (NPL) in FY 1999. Through the end of FY 2001, the Corps has removed and disposed of the MML pile and the VP pile. Coordination with Federal and state agencies, and local communities is continuing. Additionally, the Corps has initiated a Remedial Investigation/Feasibility Study (RI/FS) for subsurface contamination, the remaining site buildings, and for ground-water contamination. Through FY 2003, funds were used to continue site characterization of the subsurface soils and ground water, complete the Soils Remedial Investigation and draft the Ground-water Remedial Investigation Report.

In FY04, the Corps completes a ROD for soils, initiates the soils remediation and continues investigation of ground-water issues.

FY05 funds will be used to continue the soils remediation and complete the groundwater remedial investigation report.

The schedule for completion of site remediation is to be determined.**

* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Wayne Site Wayne, NJ New York District	124,485,000	123,439,000	516,000	200,000	330,000

The Wayne site is 6.5 acre Federal government owned site in Wayne Township, NJ. There are also 26 Vicinity Properties (VPs) covering 11 acres in the towns of Wayne and Pequannock. The radioactive contamination (Thorium-232) originated from commercial thorium processing operation conducted by Rare Earths Inc. and W.R. Grace and Company from 1948 to 1971. Contaminants migrated off-site, primarily via Sheffield Brook. The Wayne site was placed on the Environmental Protection Agency's National Priorities List (NPL) in 1984 and was added to the Formerly Utilized Sites Remedial Action Program (FUSRAP) the same year, after Congress directed the Department of Energy to undertake a cleanup of the site. Coordination with Federal and state agencies, and local communities is continuing. W.R. Grace is a potentially responsible party. Settlement negotiations with the company were completed in 1998 and subsequent to court review, a \$32M settlement was reached in July 1999. Work accomplished to date includes the disposal of approximately 40,000 CY of soil from the VP pile, created by the remediation of the VPs; completion of an Engineering Evaluation/Cost Analysis (EE/CA); the removal and off-site disposal of 40,000 cubic yards of contaminated soil under the EE/CA; and the development and approval the Record of Decision (ROD). Additionally, the Corps has completed Remedial Design workplans, excavation of contaminated soils in accordance with the ROD, onsite treatment of contaminated water for off-site disposal and site restoration. In FY03 the Corps initiated site closeout and discovered additional contamination on two vicinity properties remediated in the 1980's. These two properties have been remediated and restoration efforts will be completed in FY04. The US EPA has declared the site as construction complete in September 2003.

In FY04, the Corps is continuing short-term monitoring and site maintenance as well as site closeout activities.

FY05 funds will be used to continue short-term monitoring and site closeout activities.

*The increase in total estimated cost is due to remediation of additional radioactive contamination found on 2 vicinity properties previously remediated. A final contract audit will be required for close out of FY02 , FY03 and FY04 contracts to determine the final total estimated cost.

Transition of the completed site to DOE will depend upon the time and effort required to close out previously remediated vicinity properties.

NEW YORK

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Ashland 1, Tonawanda, NY Buffalo District	106,277,000	73,147,000	3,050,000	13,600,000	16,480,000

The Ashland 1 Site is a privately owned 10.8-acre site in the Town of Tonawanda that is contaminated with radiological waste, including thorium, uranium and radium. The waste that was disposed of at the site originated at the Linde plant, where uranium ore was processed. The Record of Decision (ROD) for this site, which includes Ashland 2 and Area D of the Seaway site, was signed in April 1998 and calls for excavation and off-site disposal of radiologically-contaminated wastes. Through FY 2003 the Corps excavated, transported and disposed of 173,000 tons out of state. Backfill of the site began in September 2003. The remaining work at the Ashland site is to clean up additional contamination at Rattlesnake Creek with an estimated volume of 30,000 cubic yard. The extra volume is reflected in the increased estimated federal cost. All planned activities continue to be coordinated with the New York State Department of Environmental Conservation.

In FY 2004 the Corps completes backfill and restoration of Ashland 1/Seaway D, and completes the Closure Report. Work plans for remediation of Rattlesnake Creek will be initiated.

FY 2005 funds will be used to complete work plans and initiate remedial action at Rattlesnake Creek.

The schedule for completion of site remediation is to be determined.**

**The completion schedule will depend on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Tentative Allocation FY 2005 \$	Additional to Complete After FY 2005 \$
Colonie Site Colonie, NY New York District	185,000,000 – 200,000,000*	148,465,000	11,604,000	10,350,000	14,581,000 – 29,581,000

The Colonie site consists of a total area of 11.2 acres plus 56 vicinity properties (VPs). The primary site was owned and operated by National Lead Industries (NL) from 1937-1984. The facility was used for electroplating and manufacturing various components from uranium and thorium. Radioactive materials released from the plant exhaust stacks spread to site buildings, portions of the grounds, and the 56 commercial and residential VPs. NL also dumped contaminated casting sand into the former Patroon Lake. By order of a New York State Court the NL plant shut down in 1984. Coordination is ongoing with the New York State Department of Environmental Conservation, and local leaders. The transfer of the property from NL to the Federal government in 1984 contained "hold harmless" language, which precludes holding NL as a PRP. At the time of transfer of FUSRAP execution to the Corps, the Department of Energy (DOE) had completed remediation of the vicinity properties; and in 1995 finalized an Engineering Evaluation/ Cost Analysis (EE/CA), authorizing a removal action to address soils contamination at the former NL property itself. Through FY 2002, the Corps disposed, off-site, stockpiled materials and excavated contaminated soils, in accordance with the DOE EE/CA; completed a reevaluation of the DOE EE/CA and issued an amended EE/CA and revised action memorandum; and continued the groundwater investigations. FY03 funds were used to continue the removal action under the revised Action Memorandum and complete a ground-water remedial investigation. Additional contaminated materials have been discovered in the subsurface.

In FY04, the Corps continues the removal action under the revised Action Memorandum, and prepares a risk assessment and Feasibility Study/Proposed Plan for ground-water investigation.

FY05 funds will be used to continue the removal action and continue development of the groundwater Record of Decision .

The schedule for completion of site remediation is to be determined.**

* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Linde Air Products Tonawanda, NY Buffalo District	167,527,000	110,242,000	27,935,000	12,750,000	17,000,000

The Linde site is located in the Town of Tonawanda, a suburb north of Buffalo, NY. The project consists of two distinct areas: the original Linde site that is now owned and occupied by Praxair, Inc.; and (2) the designated vicinity property, the Tonawanda Landfill and Mudflats area that is located about 1.5 miles north of Praxair. The Linde site is a former industrial complex in an urban area that now serves as the worldwide research and development facility for Praxair. Currently, employment is approximately 1,400 people. A public elementary school and numerous residential properties adjoin the property. Radioactive contamination generated by former Manhattan Engineering District activities, in the soils, buildings, and groundwater at the Linde site are being evaluated and remediated, as required under CERCLA. The principal radionuclides of concern are radium, thorium, uranium, and decay products. The Tonawanda Landfill and Mudflats Area consists of two contiguous Town of Tonawanda municipal tracts: the Landfill being approximately 55 acres; and the Mudflats Area, approximately 115 acres. Radioactive contamination at this vicinity property is being evaluated to determine if remediation will be necessary, as required by CERCLA. There are no buildings on this Vicinity Property

FY2003 funds were used to continue the Linde soils remedial action, complete the Record of Decision and initiate pre-demolition activities of the Building 14 operable unit, and prepare a draft Remedial Investigation/Feasibility Study on the Groundwater operable unit.

In FY2004 the Corps continues the Linde soils remedial action, completes a Remedial Investigation/Feasibility Study and Proposed Plan for the Groundwater operable unit; initiates demolition of Building 14; and completes the Remedial Investigation Report at the Tonawanda Landfill and Mudflats Vicinity Property.

FY2005 funds will be used to continue the Linde soils remedial action, complete the Record of Decision on the Groundwater operable unit, and complete demolition of the Building 14 operable unit.

Note: Changes to the Total Estimated Federal Cost include prior U.S. Department of Energy costs (\$25.1M) and cost growth associated with discovery of 40,000 additional cubic yards of contaminated materials during FY03 execution and projected overruns associated with potential soil pile remediation and infrastructure replacements. Growth in the "Total Estimated Federal Cost" column is due to the additional work needed to complete the project.

The schedule for completion of site remediation is to be determined.**

****The completion schedule will depend on overall funding constraints, and the results of the Groundwater operable unit investigation and Record of Decision.**

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Niagara Falls Storage Site Lewiston, NY Buffalo District	319,220,000 - 425,620,000*	35,557,000	5,200,000	3,500,000	274,963,000 - 381,363,000

The Niagara Falls Storage Site is a 191-acre Federally-owned site with: a below ground interim repository for radioactive residues and waste; several buildings, one of which contains isolated areas of fixed, low activity radioactive contamination; and several vicinity properties (VPs). It is located in Lewiston Township, 19 miles northwest of Buffalo, NY. Material stored in the repository includes 234,770 cy of low activity radioactive waste and 14,390 cy of high activity radioactive residues. The repository is covered with an interim cap designed to retard radon emissions and rainwater infiltration. Yearly fixed costs cover cap maintenance and site monitoring and security.

The site Remedial Investigation (RI) is 89% complete (smaller % than reported last FY due to expanded field effort) and the Feasibility Study (FS) is 74% complete. FY 2003 accomplishments include completion of the RI field work; additional geophysical demonstration of the current integrity of the waste containment structure; holding a technical project planning meeting with the project team to select remedial technologies for evaluation in the FS; and continuation of yearly site maintenance, monitoring and surveillance activities.

In FY 2004, the Corps concludes the RI; continues the FS with the evaluation of selected technologies and preparation of the draft FS report; and removes some of containerized waste left behind by DOE. Seventy five percent (75%) of the PRP analysis will be performed.

FY 2005 funds will be used to finalize the FS report; prepare the Proposed Plan; demolish the silos on building 401; and remove the last of the containerized waste left behind by DOE.

The schedule for completion of site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. The current cost estimate assumes that some action will be taken to address the entire site. The Feasibility Study will also evaluate a number of options, including the feasibility of leaving the containment structure intact for transfer to DOE for Long-term Stewardship under the MOU between the Corps and DOE. Selection of this alternative would likely result in a lower overall cost for the FUSRAP completion.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Seaway Industrial Park, Tonawanda, NY Buffalo District	33,484,000 - 63,984,000*	7,545,000	400,000	300,000	25,239,000 55,739,000*

The Seaway Landfill, a closed sanitary landfill, is a privately owned 93-acre site in the Town of Tonawanda, 3 miles north of Buffalo, NY that is contaminated, principally on 16 acres, with radiological waste, including thorium, uranium and radium. The waste that was disposed of at the site originated at the Linde Air Products plant, where uranium ore was processed. There are four areas associated with the Seaway Site - Areas A, B, C and D. Clean up of accessible (outside of the landfill) Area D soils was included in the Record of Decision for the remediation of Ashland 1 and Ashland 2. The project is being coordinated with the New York State Department of Environmental Conservation, the New York State Department of Health, and the U.S. Environmental Protection Agency. In FY 2003, the Corps continued work on a Feasibility Study Addendum, which included additional characterization of the Areas A, B and C, and incorporates additional soil volume left from the Ashland 1 remedial action in the vicinity of Seaway Area D (termed the "southside").

In FY 2004, the Corps completes the Feasibility Study Addendum; plus, potentially responsible party issues are being investigated.

FY 2005 funds will be used to prepare a Proposed Plan and conduct public review.

The schedule for completion of the site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. The first estimate represents the cost for the containment alternative, and the second represents the cost for partial excavation.

**The completion schedule will depend on the cleanup standards established for the site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005
OHIO

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Former Harshaw Chemical Company, Cleveland, OH Buffalo District	38,970,000 – 51,950,000*	4,545,000	2,400,000	1,300,000	30,725,000 – 43,705,000

The former Harshaw Chemical Company is a privately owned, 40-acre site located approximately 5 miles southwest of downtown Cleveland, Ohio. The area is predominately an industrial setting bordering the Cuyahoga River. From 1944 through 1959, the Manhattan Engineering District (MED) and the Atomic Energy Commission (AEC) contracted Harshaw for the purpose of supporting the Nation's early atomic energy program. Various forms of uranium were produced for shipment to Oak Ridge, Tennessee, for isotopic separation and enrichment. In 1960, the site was released for unrestricted use by the AEC, following decontamination efforts by Harshaw, under the guidance of the AEC. The project is being coordinated with the Ohio Environmental Protection Agency and the Ohio Department of Health. FY2003 funds were used to complete the first phase of the Remedial Investigation (RI).

In FY 2004, the Corps continues the RI, initiates the Feasibility Study (FS), and begins a potentially responsible parties (PRP) investigation.

FY 2005 funds will be used to complete the RI, continue the FS, and complete the PRP investigation.

The schedule for completion of the site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Luckey Site Luckey, OH Buffalo District	136,110,000 - 181,490,000*	13,826,000	330,000	450,000	121,504,000 – 166,884,000

The Luckey Site is a privately owned 40-acre site located approximately 22 miles southeast of Toledo, Ohio. FUSRAP contamination on site consists of both radiological and chemical wastes. The primary radiological contaminants at the site include radium, uranium and thorium. The primary chemical contaminants at the site are beryllium and lead. In 1949, the Atomic Energy Commission constructed a beryllium production facility at the site. The waste solutions and sludge from the beryllium production operations were stored in lagoons on the plant property. Waste solutions were also discharged into Toussaint Creek. In 1951 and 1952, the site operator purchased 1,000 tons of radiologically contaminated scrap steel from the Lake Ontario Storage Area. The scrap steel is believed to be the source of the radiological contamination. In 1958, beryllium production operations ceased. The Luckey project is being coordinated with the Ohio Environmental Protection Agency and Ohio Department of Health. FY 2003 funds were used to complete the Feasibility Study, and the Proposed Plan for remediation of the site.

In FY 2004, the Corps completes the Record of Decision (ROD) and conducts annual groundwater sampling.

FY2005 funds will be used to begin preparation of remediation work plans, and conduct annual groundwater sampling.

The schedule for completion of the site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

** The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Painesville Site Painesville, OH Buffalo District	19,000,000 – 22,800,000*	8,005,000	1,500,000	5,000,000	4,495,000 - 8,295,000

The Painesville Site is a privately owned 30-acre site located approximately 22 miles east of Cleveland, Ohio. In the early 1940's, the Defense Plant Corporation financed construction of a magnesium production facility on property acquired by the Federal Government. The Diamond Magnesium Company received approximately 1,650 tons of FUSRAP-related radiologically contaminated scrap steel from the Lake Ontario Storage Area, which resulted in contamination of the site. The site is contaminated with radiological waste, including uranium, radium, thorium, and decay products. The site is currently owned by the Crompton Manufacturing Company, Inc., which closed this facility in July 1999. They have demolished the plant and are performing environmental remediation for chemical contamination. 1,330 cubic yards of contaminated soils were removed from the site in the fall of 1998 under an Engineering Evaluation/Cost Analysis (EE/CA). The Corps initiated a focused Remedial Investigation/Feasibility Study (RI/FS) to determine the extent of additional contamination and establish the final cleanup criteria. The project is being coordinated with the Ohio Environmental Protection Agency and Ohio Department of Health. FY 2003 funds were used to complete the RI/FS and begin the Proposed Plan for Remediation.

In FY 2004, the Corps completes the Proposed Plan and the Record of Decision (ROD), and begins remedial action.

FY 2005 funds will be used to continue the remedial action. The final balance to complete cost depends on whether commercial or residential cleanup standards are chosen.

The schedule for completion of site remediation is to be determined.**

*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

**The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

Great Lakes and Ohio River Division

PENNSYLVANIA

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Shallow Land Disposal Area (SLDA) Parks Township, PA Pittsburgh District	TBD*	2,930,000	3,000,000	1,400,000	TBD*

The Shallow Land Disposal Area (SLDA) site encompasses 44-acres of land located in Parks Township, Pennsylvania located about 23 miles northeast of Pittsburgh, Pennsylvania. A nuclear fuel production facility located in Apollo, Pennsylvania generated wastes that were emplaced into a series of 10 trenches at the Shallow Land Disposal Area (SLDA) from the period 1960 to 1970. The contamination is believed to consist primarily of uranium and thorium associated with production of nuclear materials at the Apollo facility. The 10 trenches occupy an area of about 1.2 acres of the 44-acre Shallow Land Disposal Area. The site is currently owned by BWX Technologies and operates under a Nuclear Regulatory Commission (NRC) license. Any future U. S. Army Corps of Engineers (USACE) activities at the site will be consistent with the Memorandum of Understanding (MOU) between the USACE and the NRC for coordination on cleanup and decommissioning of the FUSRAP sites with NRC-licensed facilities, dated July 5, 2001.

In FY 2003, the Remedial Investigation initiated in FY 2002 was continued following the CERCLA process.

In FY 2004, the Corps completes the Remedial Investigation (RI) and initiates Feasibility Study (FS).

FY 2005 funds will be used to complete the Feasibility Study and Proposed Plan (PP).

*To Be Determined (TBD). A preliminary cost estimate for site remediation will be determined at completion of the Remedial Investigation phase.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2005

NATIONAL

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Requested Allocation FY 2005 \$	Balance to Complete After FY 2005 \$
Potential Sites	TBD*	0	774,000	1,000,000	TBD*

The Department of Energy (DOE) considered several hundred sites in the public and private sectors for the potential for residual radioactive contamination as a consequence of work accomplished in support of nuclear energy technology development that began in the early 1940s by the Manhattan Engineer District (MED). Of these considered sites, a limited number initially were designated for remediation under FUSRAP and the others were eliminated from further consideration at that time. Thereafter, the DOE notifies the Corps of new information changing the status of eliminated sites to that of eligible according to FUSRAP criteria.

FY2005 funds will be used to complete preliminary assessments at a number of sites referred by DOE, and if necessary, site inspections or other activities to determine if there is a release or threat of a release of a hazardous substance into the environment that will present an imminent and substantial danger to public health or welfare, and whether the site should be added to FUSRAP for further study and remediation.

*To Be Determined (TBD). Any new sites added to FUSRAP as a result of the preliminary assessment/site inspection performed with these funds will be included in future budgets.

Justification Of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 2005
(\$000)

APPROPRIATION TITLE: General Expenses

	<u>FY 2004 Allocation*</u>	<u>FY 2005 Request</u>	<u>Change FY 2004-2005</u>	<u>Percent Change</u>
1. Executive Direction and Management				
a. Headquarters, U.S. Army Corps of Engineers				
Baselevel Operating Expenses	\$ 51,633	\$ 51,153	\$ -480	-0.9%
Civil Works Program Accounts**	<u>12,503</u>	<u>21,983</u>	<u>9,480</u>	<u>75.9%</u>
Total	\$ 64,136	\$ 73,136	\$ 9,000	74.9%
b. Major Subordinate Commands	\$ 72,672	\$ 72,002	\$ -670	-0.9%
2. Other Activities				
a. U.S. Army Engineer Research & Development Center (ERDC)	269	\$ 275	\$ 6	2.2%
b. Humphreys Engineer Center Support Activity	\$ 17,020	\$ 17,199	\$ 179	1.1%
c. Institute for Water Resources	\$ 3,968	\$ 3,379	\$ -589	-14.8%
d. USACE Finance Center	\$ 991	\$ 1,009	\$ 18	1.8%
TOTAL:	<u>\$ 159,056</u>	<u>\$ 167,000</u>	<u>\$ 7,944</u>	<u>5.0%</u>

*FY04 Allocation assuming enactment of the Omnibus rescission of 0.59 percent.

**FY05 detail on next page.

APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management

<u>a. Headquarters, U.S. Army Corps of Engineers</u>	<u>FY 2004 Allocation</u>	<u>FY 2005 Request</u>
(1) Baselevel Operating Expenses:	\$ 51,633,000	\$ 51,153,000
(2) Civil Works Program Accounts:	<u>12,503,000</u>	<u>21,983,000</u>
	<u>\$ 64,136,000</u>	<u>\$ 73,136,000</u>

The Headquarters, U.S. Army Corps of Engineers is responsible for providing policy, guidance, and oversight of a comprehensive Civil Works Program. This mission is decentralized across the Corps of Engineers in 37 districts, 8 major subordinate commands (MSCs), and several field operating activities. The Headquarters, U.S. Army Corps of Engineers assists field commands by providing policy formulation and oversight, national programs management, preparation of the annual budget and legislative submission, national and international interface, management of high interest or controversial projects or issues, resource analysis and distribution, oversight of execution, and performance measurement. In addition to the traditional Civil Works mission, beginning in FY 98, the Chief of Engineers was given responsibility for the Formerly Used Sites Remedial Action Program (FUSRAP) previously managed by the Department of Energy.

The amount requested for the Headquarters, U.S. Army Corps of Engineers for FY 05 consists of two components: the baselevel operating expenses of \$51,153,000; and the Civil Works Program Accounts amounting to \$21,983,000. The Program Accounts were established in FY 95 as an outgrowth of disestablishing the Centralized Accounts, which were centrally managed at headquarters and billed back across the Corps. For expediency purposes, those activities essential to supporting the Civil Works mission were deemed appropriate for direct-funding from the General Expenses account and were presented in detail in the FY 96 budget justification data. Activities funded in the Program Accounts for FY 05 consist of: Implementing PMBP \$3.8M; Improving Technical Capabilities \$2.4M; Guidance Maintenance Program \$3.1M; Automated Information Systems \$1.3M; Leadership/Employee Development \$2M; Implementing Competitive Sourcing \$1.4M; E-government Initiatives \$0.8M; Professional Conferences/Organizational Support \$0.2M; CFO Audit \$7M and Remaining Items \$0.1M. These activities undergo close scrutiny by the USACE leadership to ensure they meet the criteria for Program Account funding and are minimally funded to meet essential Civil Works Program mission needs.

The Corps is in the process of reorganizing the headquarters and the division offices known as USACE 2012, to take advantage of organizational efficiencies as well as focusing on regional business centers using the Project Management Business Process (PMBP). We believe that this reorganization will make the Corps more efficient and effective to maintain our relevance to our customers.

The Corps is continuing its efforts to streamline the executive direction and management (ED&M) functions at all levels. The Headquarters projected staffing level for FY 05 is 420 FTE. This is a 14% reduction from the FY 97 level of 487.

The breakout of cost differences for the Headquarters by category of expenses is shown below.

	<u>Change</u>	
\$ 1,443,300		Personnel Compensation and Benefits
26,000		Travel and Transportation
7,523,700		Training, ADP and Other Contractual Services
<u>7,000</u>		Printing, Supplies and Equipment
\$ 9,000,000		

APPROPRIATION TITLE: General Expenses

1. **Executive Direction and Management** (Continued)

a. Headquarters, U.S. Army Corps of Engineers (Continued)

Cost differences: The FY 05 budget reflects a flat staffing level in the headquarters of 420 FTE, which started in FY 02. The \$73,136,000 requested for expenses of the Headquarters, U.S. Army Corps of Engineers, includes \$47,123,400 for personnel compensation and benefits for civilian personnel and military officers, and \$26,012,600 for other costs. The other costs include:

\$ 1,878,000	Travel and transportation
33,000	Rent/Communications/Utilities
23,641,600	ADP, Training, and Other Contractual Services
<u>460,000</u>	Printing, Supplies and Equipment
\$ 26,012,600	

b. Major Subordinate Commands

	FY 2004	FY 2005
	<u>Allocation</u>	<u>Request</u>
	\$72,672,000	\$72,002,000

Major subordinate commands (MSC) provide the managerial and technical direction required for supervision of subordinate district offices and coordination of regional activities necessary to execute the Civil Works Program. The Executive Direction and Management activities are currently decentralized to 8 MSC throughout the United States.

The current staffing level in the division offices is 553 FTE. This staffing level will support an average civil staffing per division of 76 FTE, with the exception of the Pacific Ocean Division, which has a primarily military mission.

The breakout of cost differences for the Division Offices by category of expenses is shown below.

	<u>Change</u>
\$ -239,200	Personnel compensation and benefits
- 95,500	Rent, utilities, and communications
- 44,100	Printing and reproduction, supplies and equipment
-116,300	Travel and transportation
<u>-174,900</u>	ADP, training, and other contractual services
\$ -670,000	

APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management (Continued)

b. Major Subordinate Commands (Continued)

Cost Differences: The \$72,002,000 requested includes \$55,825,800 for personnel compensation and benefits for civilian and military personnel, and \$16,176,200 for other costs. Labor costs reflect increases for higher than budgeted pay raises and potential increased costs due to offering relocation services under the Defense National Relocation Program. Other costs include:

\$ 5,054,600	Rent, communications, and utilities
3,706,800	Travel and transportation
689,100	Printing and reproduction, supplies and equipment
<u>6,725,700</u>	ADP, training, and other contractual services
\$ 16,176,200	

2. Other Activities

FY 2004	FY 2005
<u>Allocation</u>	<u>Request</u>
\$22,248,000	\$21,862,000

Other activities include: the Humphreys Engineer Center Support Activity (HECSA) which provides administrative support to Corps tenants of the Humphreys Engineer Center and to Corps headquarters; the Institute for Water Resources (IWR) which provides a variety of water management functions such as conducting and managing national studies, special studies in support of the Civil Works mission, data collection and distribution, and technical support to other Corps offices in matters dealing with water resource management; the Engineer Research and Development Center (ERDC) which provides support to the Coastal Engineering Research Board (CERB); and the US Army Corps of Engineers Finance Center (UFC) provides centralized finance and accounting activities. These activities reduced their staffing from 131 FTE in FY 00 to a flat 122 FTE starting in 2002.

The amount requested for these activities for FY 05 is \$21,862,000, which is a net decrease of \$386,000 from the FY 04 allocation of \$22,248,000.

APPROPRIATION TITLE: General Expenses

2. Other Activities (Continued)

Changes

\$	-91,900	Personnel compensation and benefits.
	-93,900	Rent, utilities, and communications.
	-160,200	ADP, Training and other contractual services
	-38,100	Printing, Supplies and Equipment
	-1,900	Travel and Transportation
\$	- 386,000	

Cost Differences: Breakdown of the total \$21,862,000 request for these support activities includes \$10,099,500 for personnel compensation and benefits for civilian and military personnel and \$11,762,500 for other costs. The other costs include:

\$	4,381,000	Rent, communications, and utilities (also includes HQ payments, since HECSA is HQ Spt Cmd)
	401,500	Travel and transportation of goods
	571,500	Printing and reproduction, supplies and equipment
	<u>6,408,500</u>	ADP, training, other contractual services (includes PRIP payback)
\$	11,762,500	

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

1. Explanation of Revolving Fund. The Revolving Fund, which was established by Congress in 1953 (P.L. 83-153, 67 Stat. 199), replaced the Plant Allotment Account authorized by the Secretary of War, on 13 December 1934, which had in turn replaced the Plant Program - Appropriation Basis, which was in use prior to 1934. The two systems, prior to the establishment of the Revolving Fund, did not prove to be successful, because the accounting procedures necessitated by the systems were cumbersome and resulted in a distorted picture of costs when plant was transferred from one appropriation to another.

a. Essentially, P.L. 83-153 provided that the Revolving Fund assume the total capital value of \$127.9 million in 1953, consisting of the unexpended cash balance (\$25.3 million) and the net value (\$102.6 million) of the assets and liabilities of the plant accounts; and to perform all future services, as a separate entity, within its own resources. The Plant Replacement and Improvement Program of the Revolving Fund, or PRIP, has proven to be an effective means of providing equipment and materials needed on more than one project. Some advantages of the system are: (1) Simplifies funding and accounting procedures; (2) Provides a means for plant rental which considers plant replacement costs; (3) Eliminates distorted project costs when plant is not used entirely on a single project throughout its economic life; and (4) Permits plant to be available on a timely basis to meet changing workload requirements.

b. The concept of the Revolving Fund is for it to operate within its own resources, rather than from annual appropriations. The Fund owns all the land, structures, dredges, other floating plant, aircraft, fixed and mobile land plant, tools, office, furniture, special equipment, computers and automated systems, that serve two or more Civil Works projects or appropriations. In order for the Revolving Fund to acquire and replace the above items, it is necessary that the user project or appropriation be charged a fee for the actual time the equipment or service is used. This fee consists of operating and fixed costs. The operating costs are reimbursed to the Revolving Fund without any surcharge. The fixed or capitalized costs include depreciation, based on the straight-line method and a plant replacement increment factor to provide for future increased costs of replacement items due to inflation. When planned expenditures exceed the income producing capability of the Fund, additional direct appropriations are requested.

c. When the Revolving Fund was established, Congress authorized a capital limitation or ceiling (Corpus) of \$140.0 million for the Fund. The capital value or corpus is the total assets, less liabilities and reserves. The \$140.0 million ceiling was adequate until 1965, when increased workload and inflation required that the Corps of Engineers request annual increase in the corpus ceiling. These requests were generally granted. The limitations on the corpus ceiling value limited the income that could be generated from plant rentals, which, in turn, adversely affected the overall management of the Fund. Therefore, the Corps recommended that an annual capital expenditure ceiling be substituted for the corpus ceiling. Congress granted the request in FY 1979. Starting with FY 1985, expenditure ceilings were replaced by estimates of expenditures. Starting in FY 1994, the Corps replaced the estimate of expenditures by an estimate of obligations. This was done in accordance with recommendations of the General Accounting Office that the Corps change to obligations accounting within the Revolving Fund.

2. The Revolving Fund is operated in the Divisions, Districts, and separate Field Offices, the Waterways Experiment Station, and the Cold Regions Research and Engineering Laboratory. The fund incurs the expenses of acquisition, rehabilitation, operations, and maintenance of multiple use structures, such as warehouses, shops, garages, and laboratories; the expenses of acquisition, rehabilitation, operations, and maintenance of general-purpose plant, such as dredges, tugs, launches, trucks, cranes, bulldozers, and other construction equipment; and the general expenses of District offices.

3. The Corps Revolving Fund, Plant Replacement and Improvement Program, includes thirteen New Major Items for FY 2005 and thirty-seven Continuing Major Items from FY 2004. No Continuing Major Items have revised cost estimates in excess of ten percent. The charts below provide cost estimates for the New Major Items and the revised cost estimates in excess of ten percent for the Continuing Major Items.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

New Major Items	Page	Total Estimated Cost (\$000)
1. Dredge McFARLAND - Overhaul (Philadelphia District)		20,000
2. Dredge MERRITT – Replacement of Side Casting Propulsion System (Wilmington District)		1,800
3. Dredge JADWIN – PONTOON Pipeline Replacement (Vicksburg District)		4,215
4. Dredge JADWIN – Anchor Barge Replacement (Vicksburg District)		1,120
5. PEORIA Rock Barges (2) (Rock Island District)		2,270
6. Motor Vessel (MV) PEORIA Replacement (Rock Island District)		6,225
7. Vessel BLAIR Replacement (Charleston District)		601
8. Dragline D-47 – Replacement (Memphis District)		750
9. Renovate Docks A and B – U.S. Moorings (Portland District)		3,408
10. Port Arthur Bulkhead Replacement (Galveston District)		1,131
11. Walla Walla District Headquarters Building Judgment Fund Payment (Walla Walla District)		1,541
12. Sardis-Arkabutla Project Management Office (Vicksburg District)		1,360
13. Ouachita-Greenson-DeGray Project Management Office (Vicksburg District)		3,208
		47,629

Continuing Major Items with Revised Cost Estimates in excess of 10%	Page	Previous Estimated Cost (\$000)	Revised Estimated Cost (\$000)	Total Cost Increase (\$000)

<u>PRIP Category</u>	<u>Page</u>
Land and Structures	143
Dredges	144
Other Floating and Mobile Land Plant	148
Fixed Land Plant and Automated Systems	153
Tools, Office Furniture and Equipment	154

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

4. FY 2004 and FY 2005 (Items costing \$700,000 or more)

a. Land and Structures:

(1) Renovate Docks A and B – U.S. Moorings - Portland District New. The U.S. Government Moorings Facility has been in existence since 1903. Docks A and B at the Moorings Facility provides a place for the Portland Districts owned minimum fleet hopper dredges ESSAYONS and YAQUINA to berth during the winter repair period. The last major refurbishment of Docks A and B occurred in 1964. Since that time the dock surfaces have been periodically re-decked and shear piles have been replaced due to normal wear and tear. During routine replacement of deck planking the stringers had rotted due to previous spike holes filling with water over time. In addition, several pile cap timbers have extensive dry rot up to four feet back from the cut exposed ends. The refurbishing of the Docks A and B would also bring it up to modern load bearing standards. Total estimated cost: \$3,408,000. FY 2005: \$263,000 to initiate design. Future Years: \$3,145,200 complete design and construction.

(2) Port Arthur Bulkhead Replacement - Galveston District (New). The Port Arthur existing boat basin bulkhead is 51 years old. The boat basin bulkhead and breakwater is used to provide docking and mooring facilities for the Port Arthur Residence Office floating plant equipment. The Port Arthur Residence Office primary mission is to maintain the Sabine-Neches Waterway. The Port Arthur bulkhead was constructed with salvage sheet piling, which has become corroded and has severe lamination over much of its surface. Holes have developed in the sheet piling and have caused sinkholes behind the bulkhead. In addition the present boat basin does not have any means to prevent wave action from coming into the basin. Total estimated cost: \$1,131,250. Through FY 2003: \$100,000 to initiate design. FY 2005: \$1,031,100 complete design and construction.

(3) Caven Point West Bulkhead Rehabilitation – New York District (Continuing). The 27-year-old steel sheet-piling Caven Point bulkhead is badly deteriorated. The west bulkhead is used to berth floating plant belonging to the New York District and to maintain the property line with the Caven Point Marine Base. Severe corrosion of the bulkhead has caused numerous cave-ins, which undermine the macadam area adjacent to the bulkhead that is used as a walkway and vehicle roadway, creating hazardous conditions to the crews working in the area and people getting on/off vessels. The voids created by the cave-ins have been filled and steel patches welded onto the bulkhead to temporarily stabilize the problem. Even with the patches, the bulkhead will continue to deteriorate requiring additional patches and constituting a continuing danger to employees. Total estimated cost: \$2,900,000. Through FY 2003: \$1,374,630 for design and initiate construction. FY 2004: \$1,225,670 to complete construction.

(4) Environmental Laboratory, Buildings 3296 and 3284 – Waterways Experiment Station (Continuing). Additions and betterments are required to permit the consolidation of the Environmental Laboratory into Buildings 3296 and 3284. The Environmental Laboratory is currently located in several buildings at four different locations within the Waterways Experiment Station. Management and administration as well as daily coordination of research activities are complex and inefficient under the present arrangement. The additions and betterments to Buildings 3296 and 3284 will allow for the consolidation of the Environmental Laboratory staff in a central location for a maximum efficiency of operations. Total estimated cost: \$9,105,133. Through FY 2003: \$220,000 to initiate design. FY 2004: \$168,300 to complete design. FY 2005: \$8,716,800 for construction.

(5) Coastal and Hydraulic Laboratory Headquarters Building – Waterways Experiment Station (Continuing). The U.S. Army Waterways Experiment Station Coastal Engineering Research Center and Hydraulics Laboratory were merged in 1996 to form the Coastal and Hydraulics Laboratory, the largest water resources research and development laboratory in the world. The principal objectives of the merger were to foster team approaches to addressing complex water resources issues; to streamline management and eliminate duplication in technical methods, support staff, support systems and infrastructure and create synergy. These objectives are essential in the support of the Corps civil works mission. Progress has been hampered significantly because the two former organizations remain physically located in their pre-merger buildings approximately .5 miles apart by road. While some goals of the merger have been achieved, management and

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

administration of the new organization has become more complex and less efficient because of the physical separation. The additions and betterments to the present Coastal Hydraulics Laboratory complex of buildings will allow full and complete consolidation of all personnel and equipment under one roof for maximum efficiency. The economic analysis comparing the cost of the proposed additions and betterments to the status quo supports the former based on a savings to investment ratio of 2.23 and a discounted payback period of 10.4 years. The net present value of the additions and betterments is \$15.3 million, which is \$8 million less than net present value of the status quo. Total cost estimate is \$8,385,000. Through FY 2003: \$8,112,000 to complete design and initiate construction. FY 2004: \$350,000 to complete construction.

b. Dredges

(1) Dredge McFARLAND – Overhaul - Philadelphia District (New). The Dredge McFARLAND is one of four Corps of Engineers seagoing hopper dredges that comprise the Minimum Fleet, authorized by Public Law 95-269. Homeported in Philadelphia, PA, the McFARLAND is the only Minimum Fleet dredge assigned to the Atlantic Coast and used to maintain ports and harbors along the Atlantic and Gulf Coasts. The McFARLAND was built in 1967 and has not undergone any major alterations since being placed in service. Repair efforts have become more intensive and cumbersome as technological advances replace many of the existing systems onboard the dredge. The parts necessary to make repairs to systems and the expertise required to troubleshoot problems are disappearing. It is necessary to bring the McFARLAND up to date with present technology in order to be able to maintain the vessel. In addition, repowering of the vessel would help the McFARLAND meet restrictions on exhaust emissions, similar to those already in place in California. Total estimated cost: \$20,000,000. Through FY 2003: \$10,000 to initiate design. FY 2005: \$17,090,000 to complete design and initiate construction. Future Years: \$2,900,000 to complete construction.

(2) Dredge MERRITT – Replacement of Side Casting Propulsion System - Wilmington District (New). The MERRITT was converted in 1964 to a dredge from a U.S. Navy Seaplane Wrecking Derrick. The MEERITT employs a side-casting method of dredging and its propulsion system is twin diesel, propellers, propeller shafts, and rudders. The MERRITT has been hauled on an average once a year for emergency repairs to shafts, propellers and rudders. Converting the side-casting propulsion system to a twin hydraulic outboard propulsion thruster system will increase dredging efficiency by 10 percent and allows dredging across shallower shoals, dredging in both directions and better maneuverability. Total estimated cost: \$1,800,000. FY 2005: \$1,000,000 for design and initiate construction. Future Years: \$800,000 to complete construction.

(3) Dredge JADWIN – PONTOON Pipeline Replacement - Vicksburg District (New). The Dredge JADWIN was built in 1933, and the floating discharge pipeline was furnished with the vessel. The normal economic life of a pipeline such as this is 25 years old. This pipeline is now 70 years old and maintenance and repair costs are expected to continue to increase in order to keep it serviceable. The new floating discharge pipeline pontoons (barges) will replace the existing pontoon barges that operate and support to the Dredge JADWIN on the Mississippi River. Total estimated cost: \$4,215,000. FY 2004: \$60,000 to initiate design. FY 2005: \$3,200,000 to complete design and initiate construction. Future Years: \$955,000 to complete construction.

(4) Dredge JADWIN – Anchor Barge Replacement - Vicksburg District (New). The Dredge JADWIN Anchor Barge Replacement will replace a 75 year-old anchor-handling barge, which has far exceeded its economic useful life of 40 years. The new barge will be used by the Vicksburg District to support the Dredge JADWIN on the Mississippi River. The new barge will provide the same anchor handling services as the existing barge but will operate more efficiently with less maintenance; and will comply with current safety requirements. Total estimated cost: \$1,120,000. FY 2004: \$45,000 to initiate design. FY 2005: \$810,000 to complete design and initiate construction. Future Years: \$265,000 to complete construction.

(5) ESSAYONS Bow Discharge System Replacement MDC 2576 – Portland District (Continuing). The replacement of the Bow Discharge System to the Dredge ESSAYONS will improve the mission capability and maximum efficiency and safety of operations. The original side mounted pump ashore connections on

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

the Dredge ESSAYONS are no longer the industry standard for pump ashore projects. The existing side mounted pump ashore connection system is not suitable for safe operation in an area exposed to wave action, such as Benson Beach, at the mouth of the Columbia River or the beach replenishment projects of southern

California. All modern hopper dredges equipped with pump ashore capability use the over the bow pump ashore connection system which is safer and more efficient for working in all conditions. There are currently pump ashore projects developing in the Portland District as well as in Seattle, San Francisco and Los Angeles Districts, which will require the Dredge ESSAYONS to be equipped to respond to these new pump missions. Maintaining the status quo will not allow the Dredge ESSAYONS to be utilized to its fullest potential on the West Coast or the nation. Installation of a bow connection style discharge system will expand the usefulness, allow for safe operations, and efficiently support the full range of current and planned future dredging projects. Benefit/Cost ratio is 25.5 to 1. Total estimated cost: \$795,000. FY2004: \$30,000 to initiate design. FY2005: \$70,000 to complete design. Future Years: \$695,000 to initiate and complete construction.

(6) Dredge YAQUINA Repowering MDC 2507- Portland District (Continuing). The Dredge YAQUINA is assigned to the Portland District and homeported at the U.S. Government Moorings, Portland, Oregon. The Dredge YAQUINA was put in service in 1981 and its primary mission is dredging shallow draft harbors along the West Coast of the United States, Alaska and Hawaii. The YAQUINA is a U.S. Coast Guard certified vessel capable of going anywhere in the world. During the dredging season, the vessel operates 24 hours per day, seven days per week. The original engines have been overhauled many times and are in need of replacement, due to engine blocks being at the end of their economic life. These engines are no longer manufactured and parts are becoming very difficult to obtain. In addition, the areas dredged along the California coast now have emission restrictions and permitting is required. The original engines are 1970's technology and are not designed with low emissions as a consideration. The repowering of the vessel with modern, low emission diesel engines will allow the Dredge YAQUINA to operate economically and in compliance with ever tightening emissions restrictions well into the future. Without the repowering, the engines will fail in 3-5 years and cause the dredge to be removed from service. It would take approximately three years to repower the vessel at a loss of revenue equal to \$25.6 million compared to new engines at a total cost of \$8.9 million. Benefit/Cost Ratio is 2.9 to 1. Total estimated cost: \$8,957,000. Future Years: \$8,957,000 for design and construction.

(7) Dredge ESSAYONS Repowering MDC 2548 - Portland District (Continuing). The Dredge ESSAYONS is assigned to the Portland District and homeported at the U.S. Government Moorings, Portland, Oregon. The Dredge ESSAYONS primary mission is dredging of harbors and coastal regions along the West Coast of the United States, Alaska and Hawaii. The ESSAYONS is a U.S. Coast Guard certified vessel capable of going anywhere in the world. During the dredging season, the vessel operates 24 hours per day, seven days per week. The existing original engines in the Dredge ESSAYONS have been in service for 20 years, have been rebuilt numerous times, and are nearing the end of their economic lives. The engines do not lend themselves to effective exhaust conditioning for lowering emissions and soon will not be able to comply with ever tightening emission standards on the west coast. Installation of new, more efficient, low emission diesel engines could result in potential fuel savings; may reduce the number of crew necessary to operate the dredge; and will lower permitting cost with the various air resources board jurisdictions in which the Dredge ESSAYONS operates. Without the repowering, engines would fail, and the dredge would be removed from service. It would take approximately three years to repower the vessel at a loss of revenue equal to \$46.9 million compared to repowering at a cost of \$21 million. Benefit/Cost Ratio is 2.23 to 1. Total estimate cost: \$21,000,000. Through FY2003: \$70,000 to initiate design. FY2004: \$400,000 to continue design effort. FY 2005: \$50,000 to complete design. Future Years: \$20,480,000 to initiate and complete construction.

(8) Dredge POTTER Floating Pipeline Replacement MDC 2515 – St. Louis District (Continuing). The Dredge POTTER Floating Pipeline consists of 19 pontoons each with a 54-foot length of 32-inch diameter dredge discharge pipe. The floating pipeline is used to transfer dredge materials for a distance of approximately 1,000 feet to a location outside the navigation channel. The pontoons primary mission is to carry the discharge pipe of the Dredge POTTER and support the pipe during both operations and transport along the Mississippi River within the St. Louis District. The Dredge floating pipeline pontoons are 50 years old and are in poor condition requiring annual dry-docking to maintain river worthiness. The hull plating is thin due to wear and age. The pontoons have been replated at least once and the above water portions have deteriorated from age, which now require replacement. Repair costs are expected to continue to rise. An economic analysis was done comparing the options of replacement and maintaining status quo. The economic analysis showed that replacement of the

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

pontoons was the least cost alternative with a NPV of \$4.6 million compared with an NPV of \$5.6 million for status quo. Total estimate cost: \$2,600,000. Through FY2003: \$31,300 to initiate design. FY2004: \$2,275,000 to complete design and initiate construction. FY 2005: \$150,000 to continue construction. Future Years: \$143,700 to complete construction.

(9) Dredge McFARLAND Asbestos/Lead Abatement MDC 2603 – Philadelphia District (Continuing). The dredge McFarland was built in the 1960's when both asbestos and red lead were in wide use. Asbestos is throughout the McFarland in the fireproof crew space joinery (sheathing, ceiling and paneling); pipe insulation; and structural fire protection (fireproof insulation on steel bulkheads to prevent melting in a fire). Red lead paint is also throughout the McFarland as the corrosion resistant base primer coat for all interior hull and house steel. The crew spaces on the McFarland are unchanged from the originally as-built condition. The general areas of the McFarland experiencing crew activity are the forward and aft crew quarters and spaces (pilothouse, galley etc.); the aft engine and machinery rooms; and the forward dredge pump rooms. The age of the vessel and age of the asbestos presents a high probability that fragments of the asbestos material have broken off over time and are lodged in the now inaccessible areas behind the joinery panels. Abatement of the asbestos and lead paint where crew activity occurs will ensure that current standards for crew safety are met. Total estimated cost: \$3,500,000. Through FY 2003: \$2,400 to initiate design. FY 2004: \$1,400,000 to initiate construction. FY 2005: \$2,000,000 to substantially complete construction. Future Years: \$97,600 to complete construction.

(10) Dredge Tender WAILES Replacement MDC 2521 – Vicksburg District (Continuing). The WAILES was built in 1935 and after 66 years of service is at the end of its economic life. The WAILES supports operations of the Dredge JADWIN by setting anchors, assisting the dredge in staying on-line while dredging, setting the landing barge and towing different types of barges including the fuel barge. Dredge Tender WAILES is critical to the execution of the JADWIN's mission of maintaining a nine-foot depth in the navigable channels of the Mississippi River. The Tender Wailes does not meet current industry standards; is underpowered; and is not equipped with flanking/backing rudders. This severely inhibits the steering efficiency of the vessel while in the astern or backing mode. In addition, electrical and mechanical systems are extremely old and unreliable and maintenance costs are continuing to rise. Total estimated cost: \$2,225,000. Through FY 2003: \$1,955,000 to complete design and initiate construction. FY 2004: \$140,000 for construction. FY 2005: \$120,000 to substantially complete construction. Future years: \$10,000 to complete construction.

(11) Dredge WM. A. THOMPSON Replacement MDC 2457– St. Paul District (Continuing). The Dredge WM. A. THOMPSON was built in 1937 and repowered in 1966. The dredge is a 62-year-old self-propelled dredge and part of the Corps' Minimum Dredge Fleet. It has consistently proven itself to be the most cost-effective method of maintaining the 9-foot Mississippi River navigation channel in both the St. Paul and Rock Island Districts. In accordance with PL95-269, the THOMPSON was competitively bid against industry six times from 1979 to 2001. Continued use of the THOMPSON would save the Government \$3 million annually. The existing power plant, after 33 years of use, must be replaced to reduce operating costs and downtime required to make repairs. Spare parts are becoming increasingly scarce and critical for major machinery components. Although repowering would extend the asset life another 30 years, it would not eliminate the eventual need for other MINS for updating structure and habitability items. In Dec 2001, an analysis of dredging requirements determined the THOMPSON be replaced with a component system consisting of dredge, towboat, quarters barge, and other attendant plant. This resulted in a revised cost estimate of \$20,797,000 (\$8,397,000 increase). Total estimated cost: \$20,797,000. Through FY 2003: \$11,824,000 for design and to initiate construction. FY 2004: \$8,407,800 for construction. FY 2005: \$520,000 to substantially complete construction. Future years: \$45,000 to complete construction.

(12) Dredge Ladder Extension for the JADWIN, MDC 2276 - Vicksburg District (Continuing). The spare Hurley dredge ladder will be extended from 58' to 108' for the JADWIN to enable maintaining the recently deepened 45' navigation channel from Baton Rouge to New Orleans. Lengthening is required because dredging must be accomplished when river stages are still high in order to maintain the authorized depth at low stages. The present practice is to start dredging as soon as the dredge can reach the river bottom, but with the 58' ladder sometimes this allows maintaining only a 250' wide channel, which presents problems to the shipping industry and increases the likelihood of collisions and groundings. Using the actual cost to convert the Dredge Potter as a model, and the change in scope from a newly constructed 75' ladder to lengthening of the spare Hurley ladder to 108', the estimated cost during FY 2002 was revised from \$1,090,000 to \$8,292,200 (\$7,202,200 increase); and in FY 2003 increased by \$257,800 revising the total to \$8,520,000. Increases made to this project were as the result of a transposition error. The original FY 1999 estimate of \$1,090,000 is valid. This action restores project to original approved amount. Modifications will be

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)
accomplished during the lay up period, which normally runs from December to June. Total estimated cost: \$1,090,000. Through FY 2003: \$41,500 to initiate design. FY 2004: \$800,000 to complete design and initiate construction. FY 2005: \$230,000 to continue construction effort. Future years: \$18,500 to complete construction.

(13) Dredge Ladder Extension for the HURLEY, MDC 2450 - Memphis District (Continuing). All modifications necessary will be made to increase the dredge depth of the HURLEY from 40' to 75'. This involves lengthening the existing dredge ladder, extending the hull to accommodate the longer ladder, and modifying the ladder hoisting mechanism. As presently equipped the HURLEY can effectively be utilized only to dredge the shallow draft channel of the Mississippi River. The ladder extension will allow the HURLEY to be used to maintain the deep draft channel from Baton Rouge to New Orleans, extending its useful dredge season to about 250 days per year. E&D identified additional ladder hoisting and forward hull propulsion and maneuverability requirements associated with the longer hull form. This resulted in a revised cost estimate of \$11,350,300 (\$3,263,000 increase). Modifications will be accomplished during the lay up period, which normally runs from December to June. Total estimated cost: \$11,350,300. Through FY 2003: \$4,329,100 for design and initiate construction. FY 2004: \$365,000 to continue construction. FY 2005: \$6,606,200 to substantially complete construction. Future years: \$50,000 to complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

c. Other Floating and Mobile Land Plant:

(1) Peoria Rock Barges (2) MDC 2584 - Rock Island District (New). The two PEORIA rock barges will replace a 1959 barge and two 1973 barges which are used by the Rock Island District to remove dredge material and rock replacement on the Illinois River from Chicago to Beardstown. The decks of these barges are badly cupped and deteriorated from the many years of loading and unloading. In addition, the boxes are bowed and will need extensive work. Total estimated cost: \$2,270,000. FY 2004: \$10,000 to initiate design. FY 2005: \$2,050,000 to complete design and initiate construction. Future Years: \$210,000 to complete construction.

(2) M/V PEORIA Replacement MDC 2567 - Rock Island District (New). The M/V PEORIA is a 40-year-old towboat constructed in 1963. Its mission is to tow repair fleet on the Illinois Waterway and Inland Waterway. The PEORIA is used by the Memphis District to position crane barges for lock and gate work at eight locks and dams on the Illinois Waterway. The M/V PEORIA engine was replaced in 1976 and will soon need replacement. In addition, the hull is getting thin and will need to be re-skinned. The PEORIA is also undersized and underpowered for the newer barges and cranes. The PEORIA is a single crew boat that has no means to maneuver should the engine go down. This is a safety issue, for without power the vessel could be swept into or over a dam, swept into another vessel or into a structure. Total estimated cost: \$6,225,000. Through FY 2003: \$40,000 to initiate design. FY 2004: \$10,000 to continue design effort. FY 2005: \$5,650,000 to complete design and initiate construction. Future Years: \$525,000 to complete construction.

(3) Vessel BLAIR Replacement - Charleston District (New). The BLAIR is a 30-year-old 65-foot survey vessel used in an ocean environment to support three Charleston's Districts entrance channel harbors, Charleston, Georgetown, and Port Royal, projects on an average of 57 days per year. The vessel has reached the end of its economic useful life and due to age, maintenance cost is increasing. In addition, the size of the BLAIR prohibits it being efficiently used for inner harbor and shallow projects. Replacement of the BLAIR with a mid-size survey vessel would increase the number of survey days by 93%, allow for operation in offshore sea conditions as the BLAIR as well as operation in inshore areas. Total estimated cost: \$601,200. FY 2005: \$601,200 to initiate and complete construction.

(4) Dragline D-47 Replacement – Memphis District (New). The Dragline D-61 is used by the Memphis District in support of its Plant Section for material handling in the repair of the Revetment Unit equipment. The Dragline D-47 was purchased in between 1971 and 1977 with an economic life of 20 years. The dragline has no years of economic life remaining. The replacement of Dragline 47 will reduce operating cost. Currently, parts are hard to locate and increment cost and maintenance cost are excessive. The cost to build a floating derrick with a 100-ton capacity has been estimated at \$4,500,000.00. Rental is not economically feasible as this crane is required to be available for use 365 days a year. Total estimated cost: \$750,000. FY 2005: \$750,000 to initiate and complete construction.

(5) Dragline D-61 Replacement – Memphis District (Continuing). The Dragline D-61 is used by the Memphis District in support of its Revetment Section Clearing and Snagging Unit mission. The Dragline D-61 was purchased in November 1971 with an economic life of 20 years. The dragline (crane) is used by the Loading Unit. The D-61 lifts concrete mattress (matt) off the casting field onto trucks. The trucks move the matt riverside where another crane lifts them off the trucks to barges. The matt is then transported by barge to the job site. This mission is expected to last for the next 20 years. This piece of equipment has been used approximately 12 years past its economic and useful life. Increment cost and maintenance costs are excessive. Rental is not economically feasible. Total estimated cost: \$750,000. FY 2004: \$750,000 to initiate and complete construction.

(6) Dragline D-190 Replacement – Memphis District (Continuing). The Dragline D-190 is used by the Memphis District in support of its Revetment Section Clearing and Snagging Unit mission. The Dragline D-190 was purchased in October 1977 with an economic life of 20 years. The dragline is used by the Clearing

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP) and Snagging Unit, which is the first unit to a revetment site on the Mississippi river. The unit clears the site of trees and vegetation by using bulldozers and snagging the trees with D-190. This unit is followed by the Grading and/or Sinking Unit. This mission is expected to last for the next 20 years. This piece of

equipment has been used approximately 5 years past its economic and useful life. Increment cost and maintenance costs are excessive. Rental is not economically feasible. Total estimated cost: \$750,000. FY 2004: \$750,000 to initiate and complete construction.

(7) Deck Barges Replacement MDC 2588– Omaha District (Continuing). The existing 58-year old deck barges (six) built in 1946 are in very poor condition with marginal watertight integrity and are beyond economical repair. Their primary purpose is to support the Missouri River Bank Stabilization and Restoration Project, the Kenslers Bend Bank Stabilization projects and the Missouri River Fish and Wildlife Mitigation Project. In addition, the deck barges are used to transport silt and sand dredge material on the Missouri River. The barge's interior structure is rusted and has been leaking for the past 15 years. They have had their bottoms, tops and most of the sides removed and replaced several times; but due to the extreme rusting of the interior structure, this is no longer feasible. The continued deterioration of this equipment will increase the risk of sinking, which places the towboat and its crew in an unsafe environment. An economic analysis was done to compare the option of replacement with status quo. The net present value of replacing existing deck barges is \$3.1 million while the NPV of status quo is \$2.5 million. Total estimated cost: \$2,650,000. Through FY 2003: \$40,000 to initiate design. FY 2004: \$2,480,000 to complete design and initiate construction. FY 2005: \$110,000 to substantially complete construction. Future Years: \$20,000 to complete construction.

(8) KIMMSWICK Replacement MDC 2551 – St. Louis District (Continuing). The Tender KIMMSWICK is a 34-year-old towboat constructed in 1968. The Tender KIMMSWICK serves as attendant plant to and assists the Dredge POTTER in its mission along the Mississippi, Illinois and Kaskaskia Rivers. The KIMMSWICK is used for positioning the pipeline, placing anchors, towing the dredge between dredging locations and transporting personnel. The hull plating is thin due to wear and age. The diesel engines are 15 years old and in need of overhaul or replacement. The electrical and mechanical systems on the KIMMSWICK are original parts and are now unreliable due to age. An economic analysis was done comparing the options of replacement and maintaining status quo. The economic analysis showed that replacement acquisition was the least cost alternative with a NPV of \$6.5 million compared with an NPV of \$7.7 million for status quo. Total estimated cost: \$1,780,000. Through FY 2003: \$20,000 for design. FY 2004: \$1,580,000 to initiate construction. FY 2005: \$110,000 to substantially complete construction. Future Years: \$70,000 to complete construction.

(9) Towboat PATOKA Replacement MDC 2573 – Mobile District (Continuing). The PATOKA towboat is 46 years old. The PATOKA is used to provide crew quarters and mobility support for a crane barge and attendant plant for navigation channel maintenance on the Gulf Intracoastal Waterway from Pensacola, Florida, east to Apalachicola Bay at the East Pass (Destin), Escambia River, Bayou Chico and Scipio Creek projects in Florida and on the Apalachicola-Chattahoochee-Flint River system. Repairs have kept the towboat operating but have not addressed the age of the hull, piping systems and electrical distribution system. The mission for the towboat has changed. This is due to the scheduled replacement of the crane barge in 2003 with a new crane barge with a 35-ton capacity at a 50-foot radius. Repowering the PATOKA to support the new crane barge was considered but proved not to be a viable option, due to the design of the towboat. The maximum power increase, from the present 680 horsepower to 900 horsepower would only provide half the horsepower needed to safely and efficiently handle and tow the new crane barge and attendant plant. The new mission of the towboat includes maintaining the nine locks and spillways on the Black Warrior and Tombigbee and Alabama River systems. An economic analysis was done comparing replacement and lease option. Replacement acquisition with an NPV of \$5.2 million versus \$11.1 NPV for lease was the least costly alternative. Total estimated cost: \$5,890,000. Through FY 2003: \$55,000 to initiate design. FY2004: \$5,305,000 to complete design and initiate construction. FY 2005: \$360,000 to substantially complete construction. Future Years: \$170,000 to complete construction.

(10) Derrick Boat LD 638 and LD 646 Replacement MDC 2554 – Louisville District (Continuing). The New 50-ton Derrick Boat will replace two small Derrick Boats, the LD 638 a 51 year-old 15-ton crane and the LD 646 a 48 year-old 25-ton crane. The LD 638 is primarily used for hook and the LD 646 is used for

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

snagging and dredging maintenance on the Ohio and Green Rivers. Both vessels have reached the end of their economic lives and due to the age and availability of spare parts, maintenance cost and breakdowns are increasing. Both cranes do not meet current safety standards, cannot handle personnel, and were designed and constructed prior to the building of the high lift locks and dams. An economic analysis was done comparing status quo, lease options, replacing two cranes in

kind, acquiring a 50-ton crane and borrowing a 50-ton crane. Total estimated cost: \$7,530,000. Through FY 2003: \$63,800 to initiate design. FY2004: \$50,000 to continue design effort. FY2005: \$3,500,000 complete design and initiate construction. Future Years: \$3,916,200 to complete construction.

(11) Towboat IROQUOIS Replacement MDC 2297 – Nashville District (Continuing). The IROQUOIS is a 46-year-old 750 horsepower towboat, constructed in 1955. The IROQUOIS is used to transport and position floating plant items such as derrick boats, deck barges and dump scows to maintain 1,170 miles of navigable channels and 19 navigation lock chambers along the Ohio River within the Nashville District. On several occasions, the IROQUOIS has responded to emergency dredging requests from the Louisville District to aid in keeping traffic moving on the Ohio River. The IROQUOIS was originally scheduled for replacement in 1995. The Nashville District has been able to maintain the vessel in seaworthy condition until recently when major hull components were discovered showing signs of metal fatigue and the effects of 46 years of service. The IROQUOIS has reached a point where major maintenance and repairs will not allow the vessel to continue servicing the district for more than a few years. Estimates received for the required repairs exceed the vessels current book value of zero. In addition, shipyards that inspected the IROQUOIS could not guarantee how long the major repairs would extend the vessel's life. The vessel is underpowered to push the modern floating plant equipment of the repair fleet in high flow conditions frequently experienced on the lower Ohio, Tennessee and Cumberland Rivers. This poses a severe safety problem to the vessel's crew, attending floating plant and repair fleet's mission when the vessel is needed the most. In addition, the IROQUOIS was designed and constructed before collision bulkheads and double plating for fuel tanks were required and thereby poses an environmental danger should the hull become compromised. Total estimated cost: \$4,157,400. Through FY2003: \$47,400 to initiate design. FY2004: \$3,650,000 to complete design and initiate construction. FY 2005: \$240,000 to substantially complete design. Future Years: \$220,000 to complete construction.

(12) Derrickboat No.10, Crane and Shop Barge Replacement MDC 2559 – Nashville District (Continuing). The existing barge, which supports construction and maintenance activities on the 1,170 miles of navigable channels and 14 navigable locks within the Nashville District, is approaching the end of its economic life. It is used to transport equipment and structures related to lock and dam maintenance activities such as mobile cranes, lock closure structures, mooring cell templates and lock dewatering pumps. In addition the existing barge is under-sized to handle the increasing complex maintenance activities at the districts aging lock structures, and will not have the capacity to maintain the new Kentucky Lock Addition when it is completed. The proposed replacement will be a deck barge with spuds, a small workshop and a reinforced deck, which will allow the addition, in the future, of a crawler crane with heavy lift capabilities. This acquisition is consistent with the district's Floating Plant Improvement Plan, which will replace a number of smaller barges with a smaller number of larger capacity barges. Total estimate cost: \$7,540,000. Through FY 2003: \$6,880,000 for design and initiate construction. FY 2004: \$330,000 to continue construction effort. FY 2005: \$320,000 to substantially complete construction. Future years: \$10,000 to complete construction.

(13) Maintenance Gate Barge and Spare Gates MDC 2492 – Rock Island (Continuing). Existing gate barges, constructed in 1941 and 1970, each with a set of modular spare gates, that can be configured to fit locks on the Mississippi and Illinois Rivers, are located in the St Paul District, in St. Louis Districts, respectively. The advanced age of the lock structures, over 60 years old, combined with the heavy usage, results in both sets of spares being in use most of the time. In this situation there are no spares available to return a lock to service in the event of the failure of an additional structure. Without additional spare gate replacement capability, commercial traffic on the Mississippi River will be significantly delayed, with a substantial negative economic impact. An analysis was done to determine the potential economic impact of a shut down in the absence of additional spare to permit the rapid replacement of damaged gates. It was estimated that the economic cost to the region would be approximately \$10,000,000 over the next 40 years, the estimated life of the gate barge. Total estimated cost: \$4,710,000. Through FY 2003: \$2,479,500 for design and initiate construction. FY 2004: \$2,000,000 to continue construction. FY 2005: \$150,000 to substantially complete construction. Future years: \$80,500 to complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(14) Crane Barge MAZON Replacement MDC 2509 – Rock Island District (Continuing). The Crane Barge MAZON is used for strike removal and stone placement on the Illinois River, as well as for lock and dam work throughout the Illinois River basin from Chicago to Grafton and occasionally on other waterways such as the Ohio and Mississippi. The Crane Barge MAZON was built in 1974 and is at the end of its useful life. The crane, built in 1970, is continuously breaking down and the barge hull is worn thin and in need of repairs. In the last six years the barge has had an average of six weeks of down time per year due to repairs.

The MAZON is required to be available 52 weeks of the year. The lack of a rapid response capability will delay navigation and cause economic harm to the Illinois Waterway. In addition, the MAZON has no restroom facilities, limited storage space and no travel capability for the crane. The estimated cost: \$3,825,000. Through FY 2003: \$3,620,000 for design and initiate construction. FY 2004: \$200,000 to continue construction effort. FY 2005: \$120,000 to substantially complete construction. Future years: \$9,900 to complete construction.

(15) Crane Barge KEWAUNEE Replacement MDC 2481 – Rock Island (Continuing). The KEWAUNEE crane barge, which is 88 years old, is used to support the Quad Cities crane barge during gate changes and to provide daily support to structural maintenance gate repairs. The crane and barge are utilized daily during repairs to the miter gates and they are vital to the operation of the maintenance unit. The barge itself, constructed in 1913, was converted to a crane barge in 1981. Corrosion combined with normal wear and tear has deteriorated the existing barge to the point where repairs are no longer feasible and the crane is reaching the end of its life. The breakdown of the KEWAUNEE crane barge causes costly delays in the accomplishment of Districts' mission. Total estimated cost: \$5,010,000. Through FY 2003: \$222,100 for design. FY 2004: \$4,655,000 initiate construction. FY 2005: \$100,000 to substantially complete construction. Future years: \$32,900 to complete construction.

(16) Towboat ROCK ISLAND Replacement MDC 2555 – Rock Island District (Continuing). The Towboat ROCK ISLAND is used to support the M/V Bettendorf to transport the structure maintenance fleet and tends the Derrick Boat KEWAUNEE during gate changes. This towboat is 31 years old and has developed extensive pitting on the hull exterior. This condition will require a costly hull replacement below the waterline. The internal black water holding tank, an integral part of the hull, has corroded through. The tank has been abandoned in place because of the high cost of replacement. Continued operation of the boat under current conditions will result in increased maintenance costs and reduced reliability. In addition, the ROCK ISLAND is underpowered and requires additional horsepower to safely move the fleet. Total estimated cost: \$7,055,000. Through FY 2003: \$6,550,000 for design and initiate construction. FY 2004: \$225,000 to substantially complete construction. Future years: \$280,000 to complete construction.

(17) Towboat M/V George W. Britton Replacement MDC 2350– Huntington District (Continuing). The M/V George W. Britton (Towboat 71) is used to transport the Huntington District's Repair Fleet Floating Plant to perform scheduled and emergency maintenance to 400 miles of navigable channels and navigation structures on the Ohio and Kanawha Rivers. Huntington District's Floating Plant has increased in physical size, capacity and tonnage in recent years to nearly double its original size. The current power system on the Towboat provides 1200 horse power rating. Operations presently require two trips to transport existing floating plant from one project to another during high water periods. During these high water periods the Britton's rate of travel is often slowed to less than one mile per hour pushing on one-half the Fleet. The under-powered condition of the Britton impairs the ability of the vessel master or pilot to move the fleet safely and efficiently. The economic analysis was done to compare the cost of keeping the existing towboat; re-powering; or the replacement thereof. The economic analysis showed that re-powering the Britton was slightly cheaper than the cost of acquiring a new towboat. However, re-powering would only extend the useful life of the Britton by ten years. By contrast a new towboat has a 40-year life. Total estimated cost: \$6,300,400. Through FY 2003: \$5,930,400 for design and initiate construction. FY 2004: \$360,000 to substantially complete construction. FY 2005: \$10,000 to complete construction.

(18) Derrickboat No. 49 Replacement MDC 2313 - Huntington District (Continuing). The Derrickboat No. 49 is used to perform in house and major maintenance for nine (9) navigation structures on the Ohio and Kanawha Rivers and for timely response to breakdowns and emergency work required to keep 400 miles of navigable channels open to navigation. Derrickboat No. 49 was built in 1951 and at 49 years old is reaching the end of its economic life. Technology and government standards have changed significantly since No. 49 was constructed, which necessitates expensive modifications and retrofitting. In addition, many of

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

its parts and operating systems are now obsolete and replacement parts are difficult to obtain. Also, the existing derrickboat does not have sufficient capacity to handle the more massive components such as culvert valves, maintenance bulkheads, and dam operating equipment. An economic analysis was done to compare the cost of acquiring a new derrickboat with the cost of a complete rehabilitation of the existing Derrickboat. This economic analysis showed that acquisition of a replacement derrickboat was more cost effective (NPV savings of \$15.5 million) than rehabilitation of the existing boat. Total estimated cost: \$2,790,000.

Through FY 2003: \$2,607,800 for design and initiate construction. FY 2004: \$100,000 to continue construction effort. FY 2005: \$70,000 to substantially complete construction. Future Years: \$12,200 to complete construction.

(19) Towboat M/V LIPSCOMB Replacement MDC 2520 – Vicksburg District (Continuing). The M/V LIPSCOMB is used in support of revetment construction and maintenance along approximately 1,000 mile of navigable channels on the Mississippi, the Atchafalaya and Red Rivers and Channel Patrol on the Mississippi River. The M/V LIPSCOMB was built in 1958 and is now 42 years old and has outlived its normal economic life by 2-1/2 years. Furthermore the LIPSCOMB has zero compartment floodability, which constitutes a major safety issue for crew and passengers. Current Corps standard is one-compartment damage stability for this type vessel. The proposed replacement would have increased horsepower and a modernized hull design for increased towing and operational efficiency. The new vessel would also permit a reduction in the crew size. The current estimate to replace the LIPSCOMB is \$8.5M, an increase of \$2.6M above the original estimate of \$5.9M. The original government estimate included cost and pricing data from a series of smaller, less powerful vessels. The revised government estimate adjusts costs to reflect the differences in size and horsepower, and additional items to meet mission requirements. The updated economic analysis compares the cost of keeping the existing vessel with the cost of acquiring a replacement. It showed that replacement of the LIPSCOMB was more cost effective, with a NPV of \$57.8 million, 17% less than the alternative of maintaining the status quo. Total estimated cost: \$8,558,400. Through FY 2003: \$176,700 to initiate design. FY 2004: \$8,000,000 to complete design and initiate construction. FY 2005: \$250,000 to substantially complete construction. Future Years: \$148,300 to complete construction.

(20) Six (6) Deck Cargo Barges Replacement MDC 2543 – Rock Island District (Continuing). Deck Cargo Barges are used to transport riprap to repair and construct water control structures on the upper Mississippi and lower Illinois Rivers. This is necessary for the maintenance of the 9' channel required for navigational traffic. The six barges to be replaced (545, 549, 653, 900, 901 and 903) are no longer serviceable. They have developed structural problems with the deck plate and internal bulkheads due to years of rough usage being loaded with heavy rock, up to 400 lbs. The Fish and Wildlife Service has recommended the use of heavier rock (up to 700 lbs.) for repairs and bank protection. The extended use and increased poundage will cause additional wear and caving of the deck surfaces of the old barges, which may precipitate early retirement from service before a catastrophic failure occurs. The loss of the barges represents a loss of capability of 25%, with a loss of efficiency of 35% due to increase in time to transport material. The economic analysis was done to compare the cost of replacing the 6 barges with cost to remove the barges from service and contract out the mission essential work. The economic analysis showed replacement of the barges was the most cost effective (NPV savings of \$1.6 million) of the alternatives. Total estimated cost: \$2,857,300. Through FY 2003: \$2,797,300 for design and to initiate construction. FY 2004: \$50,000 to substantially complete construction. FY 2005: \$10,000 to complete construction.

(21) Replacement Towboat, M/V RAYMOND C. PECK (MDC 2389) - Pittsburgh District (Continuing). The M/V PECK is a 1200 HP diesel powered towboat used in mobilization of the district repair fleet for major maintenance of 23 navigation structures on the Ohio, Allegheny and Monongahela Rivers; channel maintenance of 327 miles of navigable river; and for response to navigation emergency situations. The existing vessel, which was constructed in 1983, is underpowered relative to current demands, which often results in double-tripping when tow size, river or weather conditions require. An economic analysis showed that it would be less than 2% cheaper to repower the PECK to 2400 HP than to replace it with a new vessel. However, while repowering is the cheaper of the alternatives, new construction was favored because of concerns regarding how well the repowered vessel would handle and because the repowered vessel would be likely to have significantly higher operations and maintenance costs to keep it operational for the assigned 40 year life. Total cost: \$6,043,500. Through

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)
FY 2003: \$5,779,500 for design and initiate construction. FY 2004: \$254,000 to substantially complete construction. FY 2005: \$10,000 to complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

d. Fixed Land Plant and Automated Systems

(1) Facilities and Equipment Maintenance (FEM) System – Corps-wide (Continuing). Facilities and Equipment Maintenance (FEM) was developed by the Department of Defense (DOD) Joint Logistics Systems Center (JLSC) (now managed by the DOD Program Manager – Navy Systems Support Group) to meet the needs of DOD organizations with equipment and facilities maintenance responsibilities. Currently the components of the Air Force, the Navy, the Marines, and the Army are utilizing FEM to manage equipment and facility maintenance. FEM has two principal benefits for the Corps. First, it provides a standard system for managing maintenance requirements of Civil Works projects, facilities and equipment. In the absence of a standard system, field offices have either developed their own automated tools or have continued to manage with non-automated paper-based processes. Implementation of FEM will eliminate duplicative software development and maintenance efforts and extend the efficiencies of automated maintenance management to all Corps activities. Automation of maintenance management in general, and FEM in particular will extend equipment/plant service life, reduce maintenance labor costs, and reduce the replacement part inventory requirements. Second, FEM provides the Corps with a proven system based on a commercial off-the-shelf (COTS) application that interfaces with other Corps legacy systems such as the Corps of Engineers Financial Management System (CEFMS), Automated Personal Property Management System, Real Estate Management Information System, and will also replace the functionality currently provided by the Vehicle Information Management System. This system is also the information technology enabler for the operations and maintenance piece of the Corps Project Management Business Process. In addition, FEM will standardize the maintenance business process Corps-wide. The estimated capital cost for implementing FEM was identified as \$4,562,000 initially, which was adjusted for an additional cost of \$2,313,000 due to a change in pricing and settlement of a contract dispute. This baseline submission did not adequately address system interface costs, which was discovered during the development phase. This resulted in additional surveys of Corps activities to identify additional data and local legacy systems that would require contractor support in converting to the new system. This will result in an increase in requirements to support the change required to realize business values and efficiencies associated with the automated tool. A revised Benefit Cost Analysis (BCA) validated business value benefits with a Net Present Value of \$3.578M with annual cost avoidance of \$1.285M in FY 02, \$2.812M in FY 03 and \$4.149M. Total estimated cost: \$7,459,943. Total cost through FY 2003: \$6,694,943. Amounts less than previously reported due to costs incorrectly capitalized. FY 2004 – FY 2005: \$855,000 to complete design and development.

(2) Project Management Information System, P2 - Corpswide (Continuing). P2 is a commercial-off-the-shelf (COTS) configured application replacement for the Project Management Information System (PROMIS) as the next generation of program and project management software. Like PROMIS, P2 will serve as the primary tool for project and technical managers within the Corps to maintain program and project data. P2 will provide a single source of all project-related information for all programs and projects managed by field commands, and will interface with other modernized systems to assure single source data entry. P2 will enable streamlined project management and resources, and be a major improvement in the Corps project management planning capability. P2 integrates and capitalizes on advances in commercial project management software, wider availability, Web interfaces, and lower costs, which will provide a more cost-effective alternative to PROMIS. This was substantiated by an independent cost/benefit analysis of the COTS alternative. The principal benefits are lower costs to maintain and upgrade COTS software in future years. Total development cost of PROMIS through FY 2000: \$11,446,000 of which \$6,338,000 funded by the revolving fund for development, deployment and for additions and betterments. The original cost estimated for P2 was \$12,500,000, which was increased to \$15,722,000; an increase of \$3,222,000 due to increased cost and for the procurement of a corporate network analysis software, not previously identified. The current cost requirement for P2 is \$23,745,000, an increase of \$8,023,000 over the Congressionally approved Revolving Fund Plant Replacement and Improvement Program (PRIP) authority. This increase is due to a requirement to procure additional computer servers and related hardware; to develop legacy system interfaces necessary to meet the original scope presented in prior year PRIP justifications that were unforeseen, but necessary for P2 to meet the functional requirements; and to complete configuration, testing and deployment. Total estimated cost for P2: \$23,745,000. Through FY 2003: \$21,619,148 COTS purchase and application configuration. FY 2004: \$2,125,842 to complete configuration, testing and deploy system.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(3) Corps of Engineers Automation Plan (CEAP) (Continuing). The capital acquisition portion of CEAP, renamed Corps of Engineers Enterprise Infrastructure Services (CEEIS) was created to replace the Corps mainframe computing hardware consisting of leased Honeywells at the division level and Corps-owned Harris computers at the district level. The Corps awarded a contract to the Control Data Systems, Inc., in October 1989 for hardware/software acquisition and support services. The contract was structured for maximum flexibility, not committing the Corps beyond the first year but providing the Corps with 10 annual renewal options. The contract also provided for a pilot test at the Southwestern Division, the Waterways Experiment Station, and the former Headquarters' Engineer Automation Support Activity. Based on pilot and stress test results and a cost comparison of various deployment scenarios, the Corps redeployed pilot test equipment to two large regional processing sites, one in Portland, Oregon and the other in Vicksburg, Mississippi. To maintain a viable corporate-wide system at these two regional sites, the Corps has invested in additional mainframe processing capacity, operating software, additional storage capacity, communications devices, and associated processors to link all Corps sites to the two regional centers. FY 2003 and prior requirement: \$88,460,200. FY 2004: \$2,000,000. FY 2005: \$3,300,000. Future Years: \$6,600,000.

(4) Recurring ADPE Requirements Corps-wide (Continuing). This grouped item includes general purpose microcomputers, graphics display terminals, interactive terminals, plotters, remote job entry devices, digital communications equipment supporting Corps ADPE. Also included are dedicated word processing centers, microcomputers used for such office functions as word processing, electronic mail, spread sheet applications, small data base applications, Headquarters Local Area Networks centralization, and communications with main frame computers for storage and retrieval of management information. Recurring ADPE is utilized to improve the interfaces between separate computer configurations, to improve the communications transmission capability, and to replace ADPE that has reached the end of its useful life. Microcomputers are justified on a cost benefit basis to support both management and business, and scientific applications. The demand for quick access to accurate information at operational levels has generated requirements for ADPE in functional areas where it was previously absent or in functional areas where modern upgrade is required. All recurring ADPE requirements will be reviewed for consistency with the Corps of Engineers Information Systems Management Plan. FY 2003 and prior requirement: \$8,513,759. FY 2004 requirement: \$4,120,600. FY 2005 requirement: \$1,026,100.

e. Tools, Office Furniture and Equipment

(1) Walla Walla District Headquarters Building, Judgment Fund Payment – Walla Walla District (New). The provisions of 41 USC 601, the Contract Disputes Act, requires Federal agencies to reimburse the Judgment Fund. The Department of Treasury has requested repayment in the amount of \$1,541,284.85 for a Judgment Fund payment to North American Mechanical Services Corporation, d/b/a North American Construction Corporation, in October 2002. Total estimated cost: \$1,541,285. FY 2005: \$1,541,285 judgment fund payment.

(2) Sardis-Arkabutla Project Management Office - Vicksburg District (New). The building currently occupied by the Project office was built in the early 1940s and was remodeled in 1995. However it does not meet the current needs of the project office personnel. The building was originally procured from Sardis Lake project funds (CWIS 000600), but is now being utilized in support of Sardis Project Management Office, which includes Sardis Field Lake Office and Arkabutla Lake Field Office. The remodeled project office building provides space for the Project Manager and his administrative staff. The professional staff work out of a trailer that is adjacent to the project office building. The proposed plan adds one wing and a basement to the project office building. The basement design was derived from a need for supporting structure for the addition, housing for a chair lift, a mechanical room, and exit stairwell for fire egress. The addition will meet employee space utilization requirements criteria, provide employee work space in a central location to increase productivity/efficiency, provide adequate supply/equipment storage, and contain electrical systems that meet current technological requirements. Total estimated cost: \$1,360,000. Through FY 2003: \$19,200 for design. FY 2005: \$699,000 to initiate construction. Future Years: \$641,300 to complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(3) Ouachita-Greenson-DeGray Project Management Office - Vicksburg District (New). The new Ouachita-Greenson-DeGray Project Management Office has evolved around the 3 Arkansas Lake and power plant projects and their associated mission-essential operational facilities. Today, the Vicksburg District has 155 Government employees and 74 contract employees working out of this office. The existing facility space being utilized is not adequate for current staff, essential employee training purposes or joint meeting requirements. Vicksburg District employees in Arkansas are required to attend joint meetings, training courses and conference sessions several times annually. Personnel are left with no adequate facility available for these purposes based on the remote location of these projects. The building currently occupied by the Ouachita Project Management Office will be turned over to the contractor for their use; shop personnel will utilize the building currently occupied by the Lake Ouachita Field Office. All other shop and maintenance space will continue to be used as is. Ouachita Project Management Office and Lake Ouachita Field Office personnel will use the new facility as office space. The Ouachita Project Management Office and its subordinate Lake Field Offices and Power Plants will also use the facility for conferences, meetings, and classroom/training space. The new facility will conform to employee space utilization/requirements specified in AR 405-70, provide space for all employees to meet in a central location, fill ongoing need for classroom/training space, provide storage for supplies and equipment, and meet current technological requirements for communications and electrical systems that can be upgraded in the future. Total estimated cost: \$3,208,000. Through FY 2003: \$59,400 to initiate design. FY 2005: \$178,200 to complete design. Future Years: \$2,970,000 to initiate and complete construction.

(4) Zorinsky Building GSA Leasehold Improvement and Furniture – Omaha District (Continuing). The Edward Zorinsky Federal Building, a GSA owned building is currently undergoing a complete building renovation. To accommodate the renovation, the Omaha District has temporarily moved its Headquarters to three temporary locations, returning to the Zorinsky Building in January 2004. During GSA's renovation of the building, the Omaha District is responsible for the build-out of a secure communications room to house a system to receive and distribute classified messages up to top-secret level; and communication wiring to provide drops at workstations to connect to the local area network (LAN). In addition, the District plans to purchase modular/systems furniture for its 830+ employees. The existing furniture used at the District's temporary locations, moved from the Zorinsky Building, ranges from 5 year-old systems furniture to 30 year stand alone furniture with conditions ranging from good to unserviceable. This furniture requires an average of 190 square feet per person. The purchase of new system/modular furniture will reduce the average space utilization to 130 to 160 square feet per person, thus reducing the foot print by 30 - 60 sq feet per employee. Upon completion of the renovation of the Zorinsky Bldg, GSA anticipates the rent will be at least \$20.00 per sq foot. Saving just 30 sq feet per person with 830 employees is a cost avoidance or savings of \$458,000 per year in rent. Total estimated cost: \$7,111,000. FY 2004: \$7,111,000 for leasehold improvement and furniture purchase.

APPROPRIATION TITLE: Interagency and International Support, FY 2005

JUSTIFICATION:

Interagency and International Support (IIS), the manpower for which is separately resourced by the Office of Management and Budget, is reimbursable work performed by the Army Corps of Engineers and funded by various Federal agencies, states, political subdivisions of states, and other entities, under applicable Federal law. The program fills a void for many agencies, which do not have adequate capability to execute the engineering related needs of their missions or manage the engineering or construction contracts with private firms. The reimbursable assistance the Army Corps of Engineers provides is primarily related to technical oversight and contract management.

In FY 2005, the Army Corps of Engineers estimates support will be provided to over 60 various Federal agencies. The estimated dollar value of our efforts including construction is estimated to be \$950 million. The actual program size will depend on several factors: the requesting agency's appropriation which is often not known until the first quarter (or later) of the fiscal year, final agency decisions made on how and when the appropriated funds will be dispersed for projects, and the magnitude of natural emergencies.

MAJOR FEATURES OF THE FY 2004 PROGRAM:

The Corps executed \$950 million worth of work in support of non-DoD agencies. This work consists of one large (~\$300 million) reimbursable program [Superfund program for the Environmental Protection Agency (EPA)] and support to approximately 60 other Federal agencies and the Government of the District of Columbia, ranging in size from a few thousand to over \$100 million. Since 1998 the Corps has had special Congressional authorization to provide engineering, environmental and construction management services to the District of Columbia Public Schools to assist them in bringing their schools up to building and safety code requirements. The Corps began its support to U.S. Agency for International Development (USAID) in Iraq by providing oversight services for private sector reconstruction contracts.

Examples of work for other Federal agencies in FY 2004 include environmental compliance assessments for the Natural Oceanic and Atmospheric Administration (NOAA); construction grant monitoring for the Department of Housing and Urban Development; design and construction of facilities for Department of Justice agencies, Immigration and Naturalization Service and Bureau of Prisons; and study, design, engineering, and construction assistance for various Department of Interior agencies such as the National Park Service, the Fish and Wildlife Service, and the Office of Insular Affairs. One potentially large and unpredictable program is that of the Federal Emergency Management Agency (FEMA). The largest component support to FEMA occurs as a result of natural disasters where the type and magnitude of support is unpredictable.

ACCOMPLISHMENTS FOR FY 2005

The Corps will execute approximately \$950 million in support of other agencies programs in FY 2005 which will include: Environmental Restoration related work - \$300 million of work related to the EPA's programs and \$50 million of environmental restoration work for other agencies and Facilities and Infrastructure related work - \$550 million of work related to engineering, design and construction such as the design and construction of dormitories, administration and detention facilities for the Immigration and Naturalization Service, emergency management in support of FEMA and improving homeland security measures for several other Federal agencies. The Corps expects to continue oversight work for USAID.

INFORMATION TECHNOLOGY COSTS (Formerly Automation Costs)

The Army Corps of Engineers uses information technology in all phases and aspects of its operations from the planning and design of projects through their operation and maintenance; from the collection and analysis of hydrographic data to control flows in the nation's rivers to the management of fiscal and human resources; and from the search for legal precedents to the review of construction contractor performance histories. Civil Works expenditures for automated information systems include acquisition of commercial software packages and the design and development of applications to meet unique engineering requirements; the acquisition of personal computers, laptops, and the network servers for processing centers used by thousands of employees; and the leasing of long distance lines for e-mail and high speed transfer of engineering and other data among Corps of Engineers locations.

As shown on the following table, this year's projected Civil Works costs have been organized according to eight information technology portfolios, or IT programs. Within each of the programs, data are provided for the major projects, which for the most part are sponsored by Headquarters and used Corps-wide. In addition, data are provided for a ninth group of small/other IT investments consisting largely of automated information systems (AIS) at the local level or Headquarters initiatives that did not fit within the major program mission areas, and for specific investments designed to meet the objectives of the President's Management Agenda, E-Government initiative. Previously, the costs were reported in separate categories for acquisition of hardware and associated commercial off-the-shelf software (COTS), automated information systems (AIS), and the estimated direct labor costs associated with information technology charged to Civil Works projects.

The programmatic management of major IT investments enables the Corps to achieve greater efficiencies within these investments. The programs are: Financial Management Services Program, Asset Management Services Program, Emergency Preparedness and Response Program, Business Management Tools Program, Acquisition Services Program, Science and Engineering Technology Program, Real Estate Management Program, and Information Technology (IT) Infrastructure and Office Automation Program.

Source of the FY 2005 Civil Works information technology costs data is the Information Technology Investment Portfolio System (ITIPS).

INFORMATION TECHNOLOGY INVESTMENTS

INFORMATION TECHNOLOGY INITIATIVES	FY 2005 Civil Works Requirement
Financial Management Services Program	
- COE Enterprise Management Information Systems (CEEMIS)	343,800
- COE Financial Management Systems (CEFMS)	<u>7,800,000</u>
Subtotal	8,143,800
Asset Management Services Program	
- Automated Personal Property Management System (APPMS)	369,700
- Facilities and Equipment Management System (FEM)	<u>3,700,000</u>
Subtotal	4,069,700
Emergency Preparedness and Response Program	
- Deployable Tactical Operations System (DTOS)	1,100,000
- ENGLink Interactive (ENGLINK)	<u>1,600,000</u>
Subtotal	2,700,000
Business Management Tools Program	
- Operations & Maintenance Business Info Link PLUS (OMBIL)	4,000,000
- PROMIS Phase II (P2)	1,200,000
- Resident Management System (RMS)	<u>850,000</u>
Subtotal	6,050,000
Acquisition Services Program	
- Architect-Engineer Contractor/Construction Contract Appraisal System (ACASS/CCASS)	430,000
- Electronic Contract Solicitation (ECS)	<u>205,000</u>
Subtotal	635,000
Science and Engineering Technology Program	
- Automated Engineer Tools, (AET)	40,000,000
- Computer Aided Cost Engineering Systems (CACES)	475,000
- Computer Aided Design & Drafting Library of Design (CADD)	65,000
- Common Delivery Framework (CDF)	720,000
- Corps Water Management System (CWMS)	750,000
- Equipment Manual (EP1110-1-8)	145,000
- Numerical Models (NUMMOD)	980,000
- SPECSINTACT (SI)	125,500
- Design Review and Checking System (DRCHECKS)	<u>217,600</u>
Subtotal	43,478,100

INFORMATION TECHNOLOGY INVESTMENTS

FY 2005
Civil Works
Requirement

INFORMATION TECHNOLOGY INITIATIVES

Real Estate Management Program

- Real Estate Corporation Information System (RECIS) 348,000
- Real Estate Management Information System (REMIS) 4,800,000

Subtotal 5,148,000

Information Technology (IT) Infrastructure and Office Automation Program

- CE of Engineers Enterprise and Information Services (CEEIS) 20,700,000
- Information Assurance (IA) 10,000,000
- Local Area Network 23,800,000
- Office Automation (OA) 81,000,000
- Telecommunication 45,000,000

Subtotal 180,500,000

Small/other projects and total investments

Automated Information Systems (AIS)

Headquarters:

- Corporate Information 396,600
- Civil Works 194,000
- Human Resources 292,700
- Hazardous Toxic Radioactive Waste Lesson Learned 6,000
- Resource Management 14,000
- Directorate of Logistics 181,400
- Office of History 12,500
- Equal Employee Opportunity 5,600
- Safety & Occupational Health Office 34,000

Field Operating Activities

- Huntsville Division 160,000
- Ohio River Division 7,000
- Mississippi Valley Division 510,000
- North Atlantic Division 1,200,000
- Northwestern Division 366,000
- Pacific Ocean Division 22,600
- South Atlantic Division 34,000
- South Pacific Division 65,000
- Southwestern Division 4,000
- Institute for Water Resources 241,500
- Other 2,000,000

INFORMATION TECHNOLOGY INVESTMENTS

INFORMATION TECHNOLOGY INITIATIVES	FY 2005 Civil Works Requirement
Subtotal	5,746,900
Field Support to Standard Systems (SPTSTDSYS)	13,000,000
Corps of Engineers Automated Legal System (CEALS)	200,000
Corporate Information Program (Small/other)	
- Information Technology Investment Portfolio System, Corps' Enterprise Architecture	330,000
Civil Works Program (Small/other)	
- Natural Resources Management Gateway	300,000
- SignPro	100,000
- Recreation.Gov & Recreation One-Stop Web Page Support	1,300,000
- Inland Electronic Navigation Chart (IENC) Program. Program is in partnership w/National Oceanic & Atmospheric Administration, Coast Guard & River Boat Pilot Association	4,000,000
- CorpsMap	200,000
- Geospatial One-Stop and National Spatial Data Infrastructure (NSDI)	400,000
- Volunteer Government/Government	100,000
	6,400,000
Total Funding	276,401,500

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

Summary of Budget Request for Inland Waterway Trust Fund Projects

Project Name	Construction, General Appropriation \$	Inland Waterways Trust Fund \$	Total \$
Construction			
Inner Harbor Canal Lock, LA	5,000,000	5,000,000	10,000,000
Kentucky Lock and Dam, Tennessee River, KY	12,500,000	12,500,000	25,000,000
Locks & Dams 2, 3 & 4, Monoghela River, PA	15,500,000	15,500,000	31,000,000
Marmet Lock, Kanawha, River, WV	25,000,000	25,000,000	50,000,000
McAlpine Locks & Dams, IN & KY	29,000,000	29,000,000	58,000,000
Olmsted Locks and Dam, IL & KY	37,500,000	37,500,000	75,000,000
Robert C. Byrd Locks and Dam, WV & OH	300,000	300,000	600,000
(Locks)	(300,000)	(300,000)	(600,000)
(Dam Rehabilitation)	(0)	(0)	(0)
Winfield Locks and Dam, WV	1,500,000	1,500,000	3,000,000
Total - Construction	126,300,000	126,300,000	252,600,000

Justification of Estimates for Civil Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

Summary of Budget Request for Inland Waterway Trust Fund Projects

Project Name	Construction, General Appropriation \$	Inland Waterways Trust Fund \$	Total \$
Rehabilitation			
Lock and Dam 19, Mississippi River, IA (Rehab)	2,400,000	2,400,000	4,800,000
Lock and Dam 24, Mississippi River, IL & MO (Rehab)	4,400,000	4,400,000	8,800,000
Total - Rehabilitation	6,800,000	6,800,000	13,600,000
Gross Total - Construction and Rehabilitation	133,100,000	133,100,000	266,200,000
Reduction for Anticipated Savings and Slippage	(18,100,000)	(18,100,000)	(36,200,000)
Net Total	115,000,000	115,000,000	230,000,000

Justification of Estimates for Civil Works Functions Activities
 Department of the Army, Corps of Engineers
 Fiscal Year 2005

SUMMARY OF APPROPRIATIONS

APPROPRIATION TITLE	FY 2004 Appropriation 1/	FY 2005 Request	Increase (Decrease)
General Investigations	\$ 100,000,000	\$ 90,500,000	\$ (9,500,000)
Construction, General	1,350,000,000	1,421,500,000	71,500,000
Operation and Maintenance, General	1,939,000,000	1,926,000,000	(13,000,000)
Flood Control Mississippi River and Tributaries	280,000,000	270,000,000	(10,000,000)
Regulatory Program	144,000,000	150,000,000	6,000,000
Flood Control and Coastal Emergencies	70,000,000	50,000,000	(20,000,000)
General Expenses	171,000,000	167,000,000	(4,000,000)
Revolving Fund	0	0	0
FUSRAP	140,000,000	140,000,000	0
Permanent Appropriations	15,102,000	14,008,192	(1,093,808)
Total	\$ 4,209,102,000	\$ 4,229,008,192	\$ 19,906,192

1/ Energy and Water Development Appropriations Act, 2004, P.L. 108-137